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Church-Towers of the Meuse

By Ralph Fanning, M. S. B. Arch.

Illustrations by the Author

> "That spire is gone that slept for centuries,
> Mirrored among the lilies, calm and low;
> And now the water holds but empty skies
> Through which the rivers of the thunder flow."
>
> —Herbert Asquith in "The Volunteer and Other Poems."

THUS wrote an English soldier from the battered fields of France, voicing in his verse the sentiments that must be those of many others who, lacking the gifts of poetic expression, yet contemplate with emotion the wreckage of the parish churches whose towers and spires and belfries made much of the charm of the landscape of northern France. Gone in many places are the picturesque landmarks; mutilated beyond the powers of the restorer are many of the quaint architectural motives; desecrated by the grim hands of war are the towers of many sacred shrines; yet those that still remain, battered and forlorn as they may be, are worthy of veneration and study, not only as sacred relics symbolic of a stanch faith, but as architectural features of artistic value in line and proportion.

Spire of Lavoir, Meuse.

The churches of the Department of the Meuse, in the little villages frequently scattered over the rolling hills, nestled in the sheltering Argonne or mirrored in the placid waters of the Meuse or Aire, perhaps suffered as sad a fate as any group of structures could, and by their loss took from the world much of modest architectural grace and beauty. Although the Meuse in its balmiest pre-war days could boast of no famous religious edifices of artistic grandeur such as Rheims, Amiens, or Soissons, its larger churches, such as the cathedral at Verdun, and the interesting old churches of St. Pierre and St. Antoine at Bar-le-Duc, would have demanded special notice had they not been in a land of great religious monuments. But even the small parish churches, in spite of their insignificance by comparison with the more pretentious and famed, bore not only dates and historic records that would fascinate the curious student, but features of real artistic merit to attract the artist and architect and every lover of the beautiful and symbolic in religious and social expression of human achievement.

Travelling northward from Bar-le-Duc, the prefecture of the Meuse, which is in the southernmost corner of the department, one may leave behind the clock-tower, "à la côte Ste. Catherine," the seat of the ancient dukes of Bar, may bid farewell to the churches of St. Antoine and Notre Dame, thinking to say adieu to all traces of architectural interest in the rural regions beyond the Ornain—where the ravages of war have been so evident during the late years—only to find before many kilometres have been traversed repeated reminders of religious zeal and architectural skill in quaint and unexpected towers. Whether one travels

Curious parish church of the Ardennes.

The tower at Dombasle, Meuse.

along the dusty white roads or on the dubious narrow-gauge railroad, the surprises are the same. Appearing around some bend in the road, raising up from behind some sunny verdant grove, silhouetted against a distant low-hanging mass of cloud, peering over a cosey nest of dull-red tiled roofs, one church-spire after another beckons the traveller on his course. Like exclamation-points in architecture, as it were, they add the interest to the landscape that keeps the traveller's eye alert.

There are churches of aspiring dignity like Revigny, Laheycourt, Triacourt, Walley, Rarecourt, and Auzeville. The aspiring sumptuousness and formality of these seems all out of keeping with the poverty and humility of the villages nestled in their protecting shadows, until one notes the age of the church and realizes that while ofttimes a village may have burned or fallen in decay, the church of heavy stone construction still stood to witness the growth or decline of succeeding village life. There are smaller though hardly less interesting churches such as Brizeaux, Frodois, Lavoir, Brabant, Le Neufour. There are unusual churches, unexpected in plan and position, like Beaulieu, Passavant, Clermont, Dombasle, Lachlade. Then there are the ghosts of churches, sad ruins now, only crumbling stone and tile and mortar to mark the place where once stood some dignified or interesting or original house of worship. The pathos of the fate of these dead churches, such as Varennes, Montfaucon, Clermont-en-Argonne, Neuilly—to mention a few from many—increases as one realizes the meagreness of the records that remain to perpetuate the memory of these shrines of beauty and devotion. Only some charred and tottering walls, a faltering arch, a fallen buttress, a bit of broken saintly image or crumbling gargoyle can serve in so many cases to recall to the eyes of the former worshipper the religious home of happier times. In but few cases have photographs or illustrations remained to picture the former church with all that it must have meant to the provincial French peasant in its connection with baptisms, conversions, marriages, and deaths.

Of those churches that still remain, many interesting architectural features instil within one a hope that many of the fallen monuments may still be preserved from further decay or restored in their original lines. Most prominent of the features and those most sadly missed in the landscape are the towers and spires that dominated the countryside before the devastation. Of the remaining ones, the massive stone bases seem to encourage the nave or church proper, as well as ofttimes the neighboring structures, to lean upon it for support. There may be an opening in the base, heavily voussoired as befits the solid masonry, or projecting quoins of rococo-like decorations. Painted images of patron saints may find shelter in small niches within the thick walls. There is usually, however, little to break the dignified solidity and strength of the square church-tower until it rises above the roof of the church. Here it portrays its function of being the home of the bells.

The ringing of bells, proclaiming the passing hours or calling to rest or prayer, was an intimate part of the very atmosphere of northern France. Shuttered openings of varying shapes and sizes appear in the upper tower to emit the metallic tones over the moss-grown roofs and patchwork fields and dark woodland, until their vibrations would

Bar le Duc Meuse.

The clock-tower, Bar-le-Duc.

Church at Frodois, Meuse.

meet and mingle with those from a neighboring spire. A curious clock, the ingenious device of some clever mechanic, would show a face or more to warn the tarrying villager of fleeting time, or call forth his Gallic contempt and witticisms if the wooden hands failed to move with timely discretion.

Sometimes a stone spire rose above the square base of the tower, rising aloft on its pyramidal or conical apex, the cross with the weather-vane cock of France above, again the proud handiwork of some honored village craftsman. There comes to mind the words of a battered old French carpenter who, after the passing of armies through his weary little village of Brizeaux, would forget his own aches and pains and hunger to gaze at the shattered point of the church-spire and bemoan the fallen fate of the former surmounting cross—"a cross magnificent, higher in stature than twice six foot, monsieur"—which he, himself, had erected with his own hands.

Other spires might be of lighter though more curious workmanship; elongated hexagonal or octagonal pyramids made of wooden frames covered with sheet metal or slate joined to the masonry base by a curious transition of bulbous cushion-like forms, curved planes and warped surfaces, making siolettes unique yet pleasing. The vogue for these unusual forms that must have called forth exceptional skill in craftsmanship, even when formed of pliable metal on wooden forms, seems to have been prevalent throughout the Meuse. Their origin and the source of inspiration for their designers would be as interesting to fathom as they themselves are to encounter. One is reminded of Moorish and Near Eastern domes and turrets. Could it have been that the Spanish invasion of the Netherlands brought with it the architectural influence of the Moors to spread its forms in the remote valley of the Meuse, even as this foreign influence is seen in some of the mediæval works in Belgium? This seems a bit far-fetched, yet Spanish-worked iron firebacks of authentic date have been found in this region. More probable is the inference that this style of irregular spire construction was introduced into some village by a travelled priest or craftsman, who thus set the fad for competing villages to imitate or rival.

Whatever may have been the source of the architectural form, the fact remains that these village churches played a lofty part in modelling the lives of the people who dwelt within the shadows of their spires and the sounds of their bells, and later gave full proof of their willingness to make the supreme sacrifice for the salvation of their altars and hearthstones. As the wounds of war heal, may the angelus again be heard throughout these stricken regions, but with a deeper tone of thanksgiving for those churches that do remain, even battered as they are, and with a ring of hope that a lasting peace may come to perpetuate the placid reflection of the sanctified towers in the waters of the Meuse.

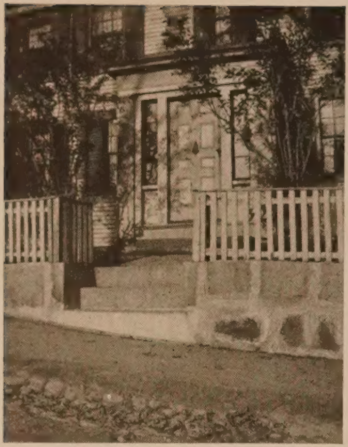
The church-tower, Rarecourt, Meuse.

A Pilgrimage to Plymouth

By Dwight James Baum, B. of Ar. A. I. A.

(Continued from September issue)

PART II



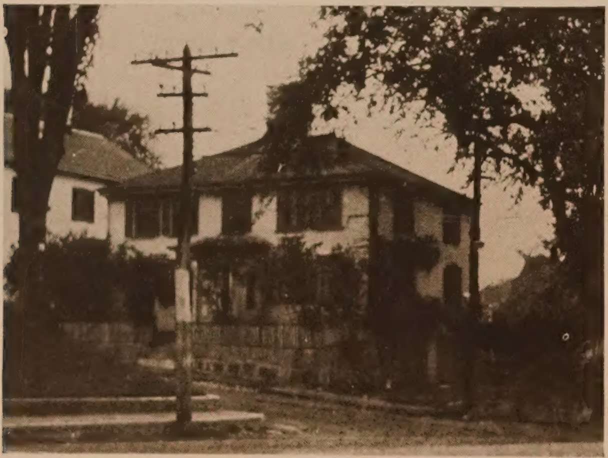
Doorway of Miss Alice B. Barnes's house, Plymouth. Built by Benjamin Bartlett, 1726.

PLYMOUTH does not express as much as Andover, Salem, Marblehead, and a few other New England towns, the growth and prosperity of the town and its people. The early settlers have left examples of architecture showing their humble farmhouses of the seventeenth century and the more dignified yet simple houses of the early eighteenth century. Then there seems to be a lapse of building until a later date, from about 1803 to 1809, and even then only a few good examples seem to have been built.

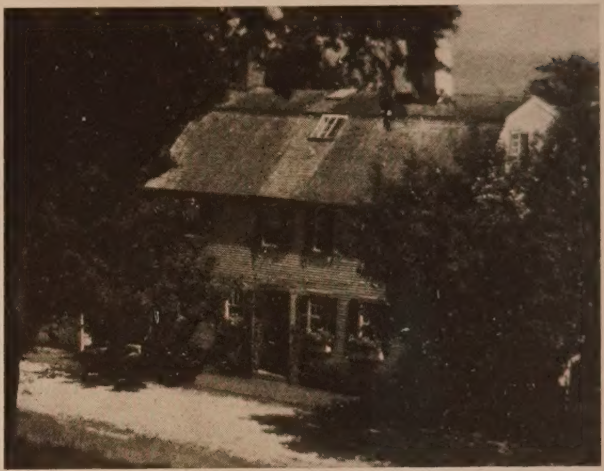
Generally all colonial towns in New England repeat in a large degree the salient characteristics of every other colonial town. Also, generally, if fine detail is found on features of real early houses, this was added at a later period.

Whether good sense of proportion throughout was instinctive, or accidental, the result was none the less interesting and worthy of careful study. This early colonial architecture was not monumental but showed a certain characteristic grouping and ornamental treatment that was distinctive.

It struck just the right note of proportion, harmony, and fitness, and showed also the distinctive character of the lives of the people. Even by glancing at the exterior of their houses and looking at the material and how they used it shows that here exists an indigenous architecture wholly suited to its purposes.



Miss Alice B. Barnes's house, Plymouth. Built by Benjamin Bartlett, 1726. Once owned by the Howland and Carver families.



House, George Hobart. Built 1719.

One of the interesting peculiarities of early American domestic architecture is its localism, adherence to type in a restricted locality.

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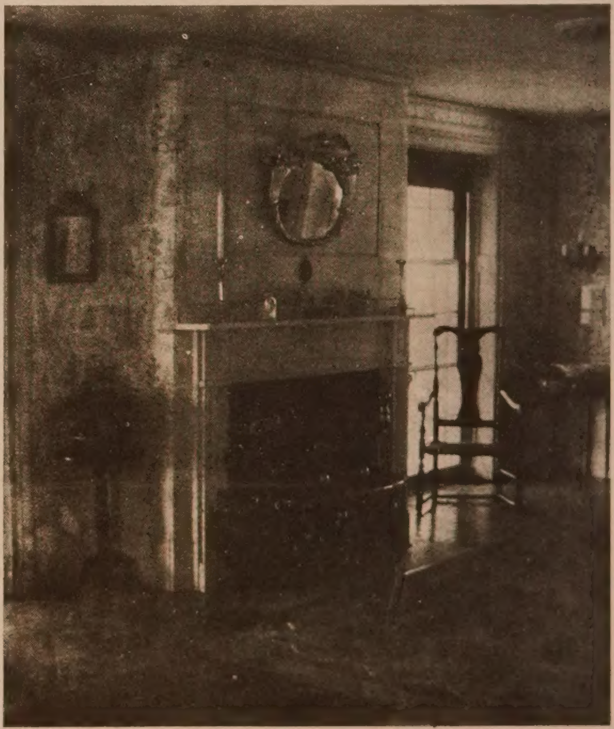
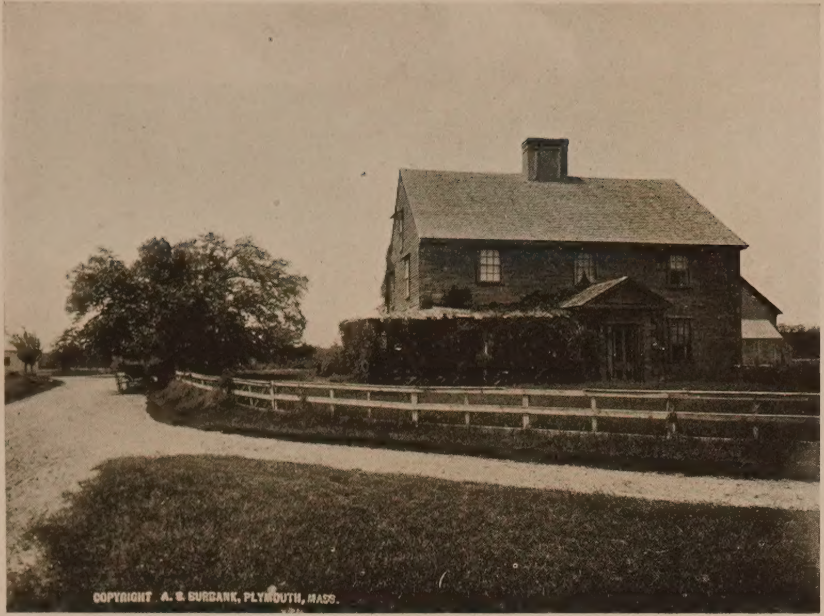
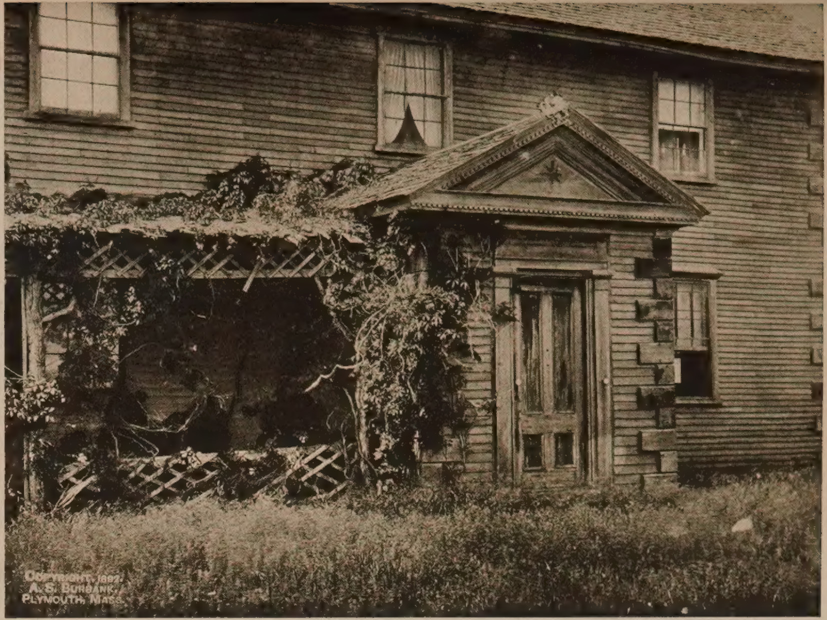


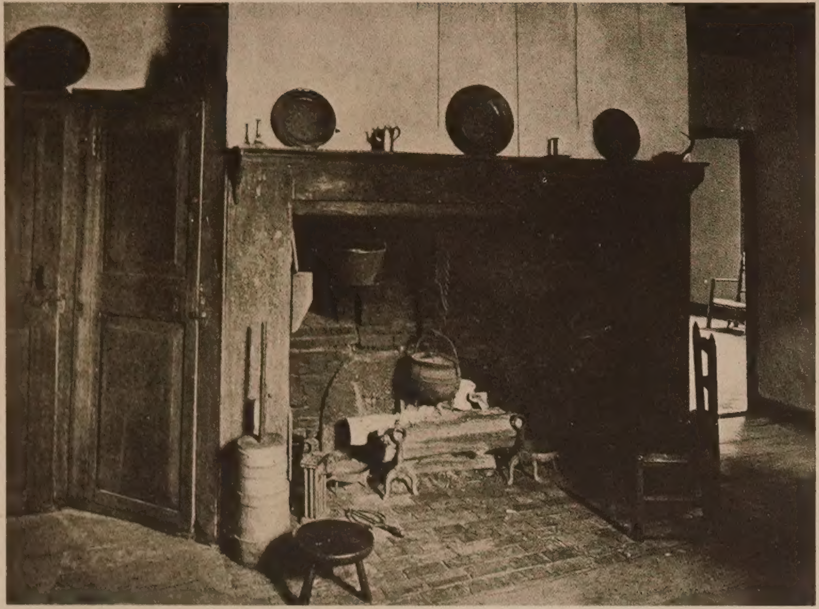
Interior, house, George Hobart (1719).



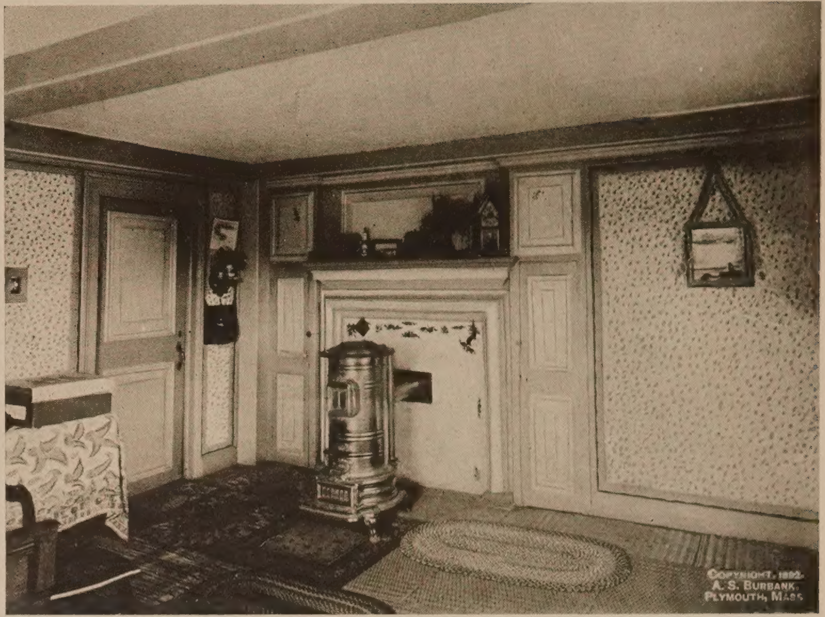
ISAAC WINSLOW HOUSE.



DOORWAY.



THE OLD KITCHEN.



FIREPLACE AND SECRET CLOSET.

A particular local type of vestibule is shown on the Isaac Winslow house, built at Marshfield in the year 1699. Here also is one of the few examples in the district of the Georgian stone-quoin treatment adapted and carried out in wood.

At this early date the germ of panelled walls on one side of a room, especially around the fireplace, found root. In the Winslow house this is shown both in the kitchen, where there exists a charming wide fireplace with a panelled-door treatment on one side, and a balanced-cupboard treatment with panel over fireplace in a bedroom above. Later such a treatment was carried across the entire side of the room, making a quaint and finely American colonial treatment.

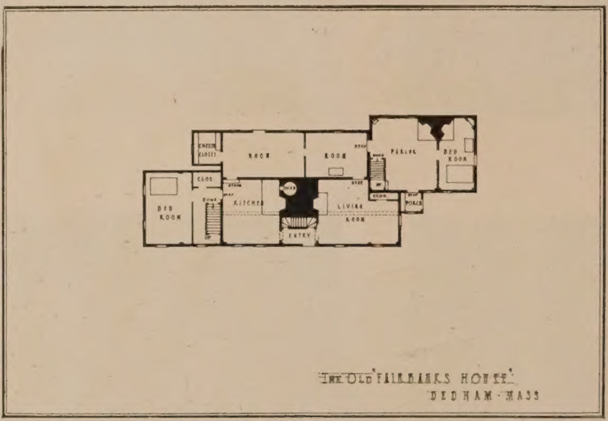
Mr. Low's house on North Street (overlooking the bay).

Edward Winslow house, North Street, Plymouth, built 1754 (after alterations).

(*Continued from page* 328)

As in classical architecture which originated as a one-storied style, the smaller and simpler two-storied houses of modest type are quite often the most attractive. They are severe as were their builders' lives, crude in a way yet pure in line, well balanced and well proportioned. They were simple yet dignified, built well by honest craftsmanship. Even to-day they are correct architecturally, and, if altered, would probably lose their quaint charm. We of to-day are awake to the possibilities of adapting these old houses and with them as a prototype are again trying to develop a typical American architecture. The later period of colonial work began in the earlier part of the eighteenth century when men had more time to think of the finer things in life, the country had been subdued, and other functions besides safety and utility could be considered. Then early in the nineteenth century architecture sunk to ignoble depths and it has taken nearly a century to bring back some of the quaintness and charm of those early periods. During the eighteenth century the English Georgian period was drawn upon, but adapted rather than reproduced. Effort was made to ornament the exteriors and with it a grace and charm was given that was lacking in the earlier work. The style was no longer simple and expressed living under happier and less stern conditions than under Puritan conditions.

Then step by step the development of these houses expresses an era of prosperity, culture, and refinement. The fourth dimension was mastered even in the farmhouses of early New England. Construction did not require a lot of money but apparently did take some expenditure of thought. The question of proportion is intangible, and often the least ornamented houses give an impression of the greatest distinction. The regrettable love of change by the American people as well as the growth of cities has served to destroy most of these examples, but in smaller communities such as Hingham, Duxbury, Marshfield, etc., they still can be found.



Typical simple original plan of New England house with added wings, etc.

Later, Plymouth, etc., suffered from the Greek revival, with a particularly heavy hand. The central-chimney plan remained in fashion up to the Greek revival, although the houses grew larger, lost their quaintness, and acquired more

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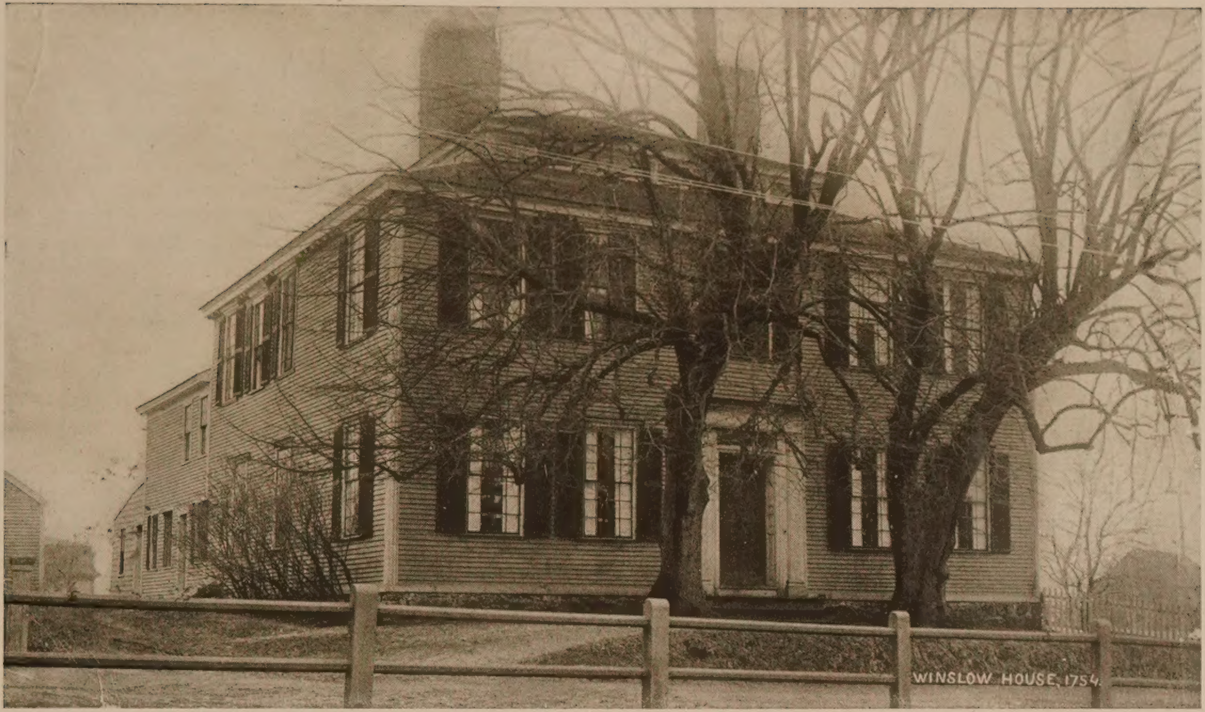
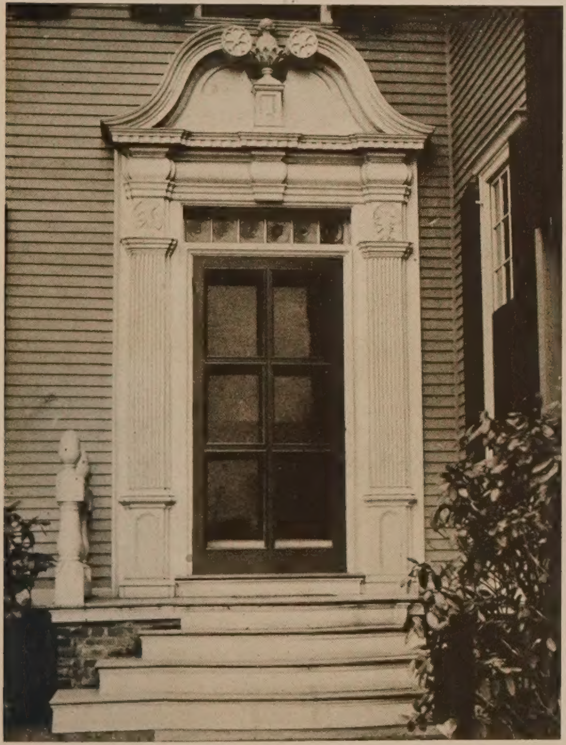
North and Court Streets, Plymouth (1921), showing buildings of different periods.

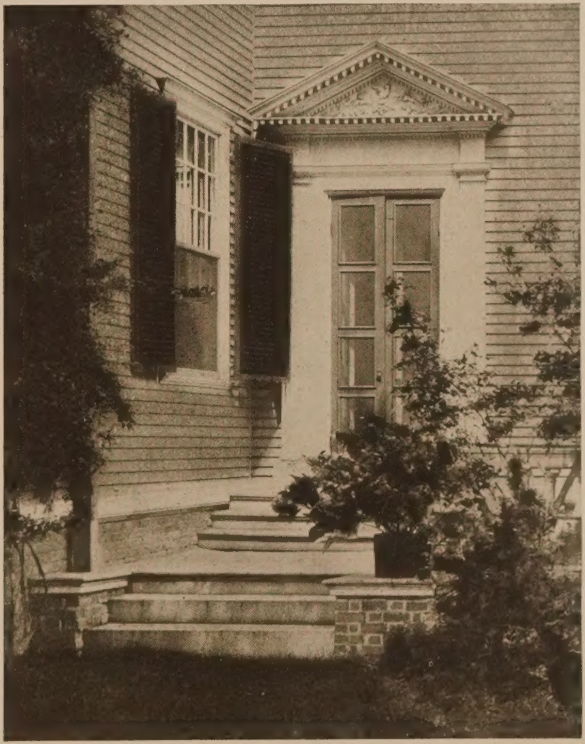
House on Pleasant Street.



EDWARD WINSLOW HOUSE, NORTH STREET, PLYMOUTH, 1754 (BEFORE ALTERATIONS).

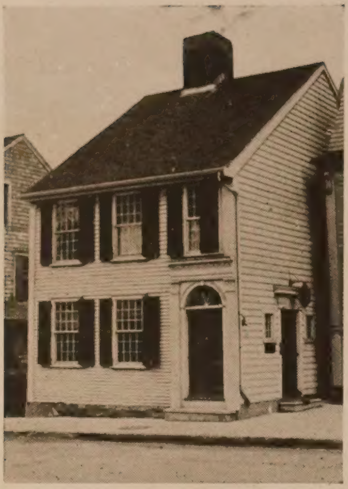


DOORWAY, EDWARD WINSLOW HOUSE, 1754 (AFTER ALTERATIONS).



DOORWAY, EDWARD WINSLOW HOUSE, 1754 (AFTER ALTERATIONS).

The Edward Winslow house at Plymouth, built in 1754 by the son of Governor Winslow, is another example of refinement that was beginning to show at this time. Here is expressed the best work of the district and time. The detail of the original entrances is beautifully carried out and expresses, as does the entire original house, much care and thought in its design. A few years ago this house was purchased and remodelled, and, somewhat like the well-known story of a famous doctor, "the patient died of improvements." Parts of the house still are visible through the large porch that was added, the original simple roof can still be seen through the various new balustrades, and an ornate pedimented entrance on the side shows the extremes sometimes tried when alterations are considered, which results in overornamentation in certain features, taking away from the original design. The approach has also been spoiled, for how much more successful are the surroundings of the Barnes house with its simple wall and unpretentious picket fence.



Doctor Hill's house on Court Street. Built by John Bartlett and Seth Morton, 1803.

(*Continued from page* 330.)

dignity. Then the plan went out of fashion and the central-entry type of plan became popular. The framing was sometimes of oak, otherwise hard pine, the exterior casing usually of white pine, so quite often left to the coloring agencies of the weather.

Nearly all Massachusetts houses of the period before and around 1700 have central stacks with rooms and entry grouped around same. The roof lines express an atmosphere of New England primness.

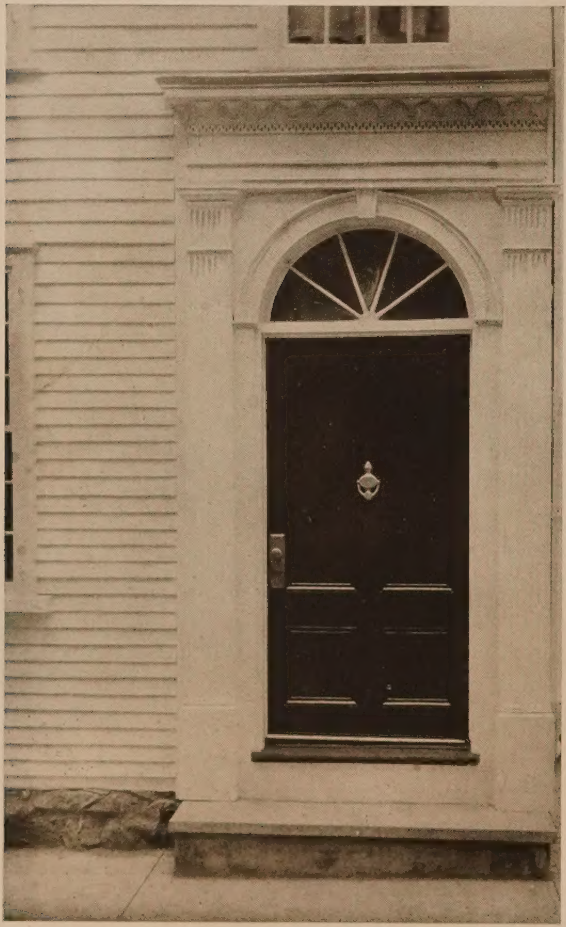
Another characteristic is the adding on to the rear, in endless sequence, laundry, dairy, coal-bin and woodshed, smoke-house, etc., until on some farmhouses the dependencies joined on with the barn.

The gambrel roofs sometimes show that short upper slope which seems to give a quaint aspect to the entire roof.

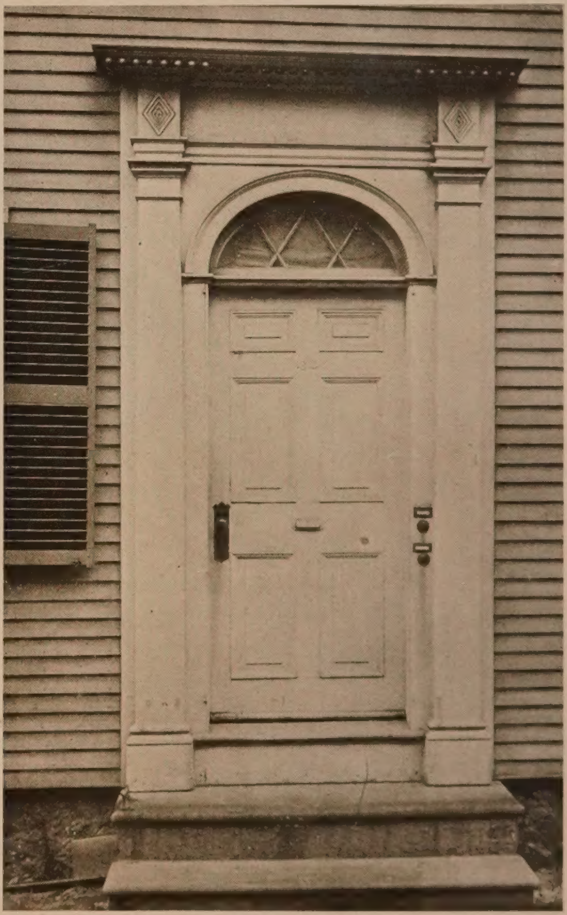
The Barnes house in Plymouth, which was built in 1726 by Benjamin Bartlett and later owned by the well-known Howland and Carver families, shows one of the earliest pitched roofs as against the gambrel and gabled ones universal throughout the district. This house with its simple, low roof, in well-proportioned mass and interesting fenestration, is a fine example of early refinement. Here again the Winslow type of vestibule is used, breaking up the otherwise severe front. Instead of plain door, as in the first example, simple side-lights balance the door, the corners being finished with flat pilasters and a simple cornice above. The roof is kept flat, which is also a departure from previous work. Here the simple walls of large stones and the small picket fence above add quaintness to this old place.

In the Doctor Hill house, built 1803 by John Bartlett and Seth Morton, which is located on Court Street, the main street of Plymouth, is an example of a small town house on a narrow lot which is interesting in both scale and detail. The main entrance and the side entrance are both unusually placed. The detail of the pilasters, caps, and cornice mouldings are exceptional in their delicacy for the district, and seem to have a flavor of South Carolina instead of New England.

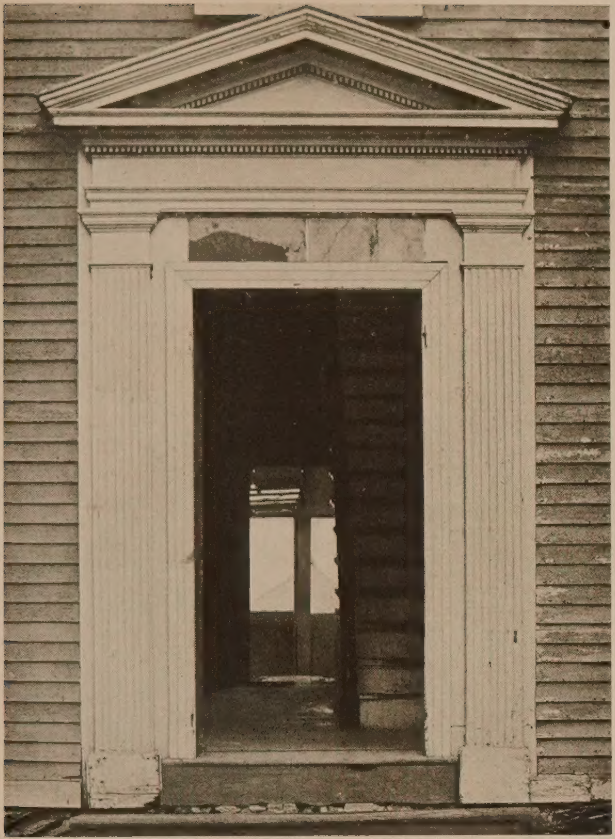
In the Paty doorway on Sandwich Street a method of getting light into the hall was worked out by giving a greater width above the door trim to the architrave than from trim to pilasters. Then glass was inserted flush with the wood surface. This had the advantage of keeping down the height of the exterior treatment.



Doorway of Doctor Hill's house, Plymouth. Built by John Bartlett and Seth Morton, 1803.



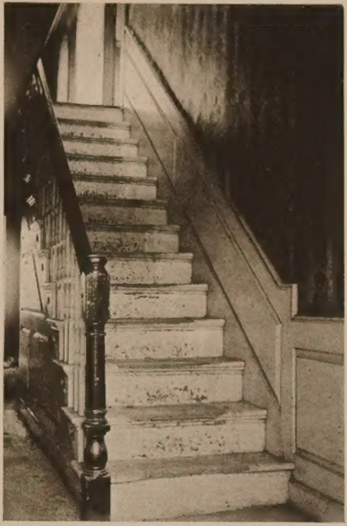
Doorway, Joseph Barnes's house, Plymouth.



Doorway.

The doorway of the Joseph Barnes house also has the Southern feeling in its scale and cornice detail. Here the plain architrave and pilasters prove unusually interesting beside the very narrow siding and simple shutters.

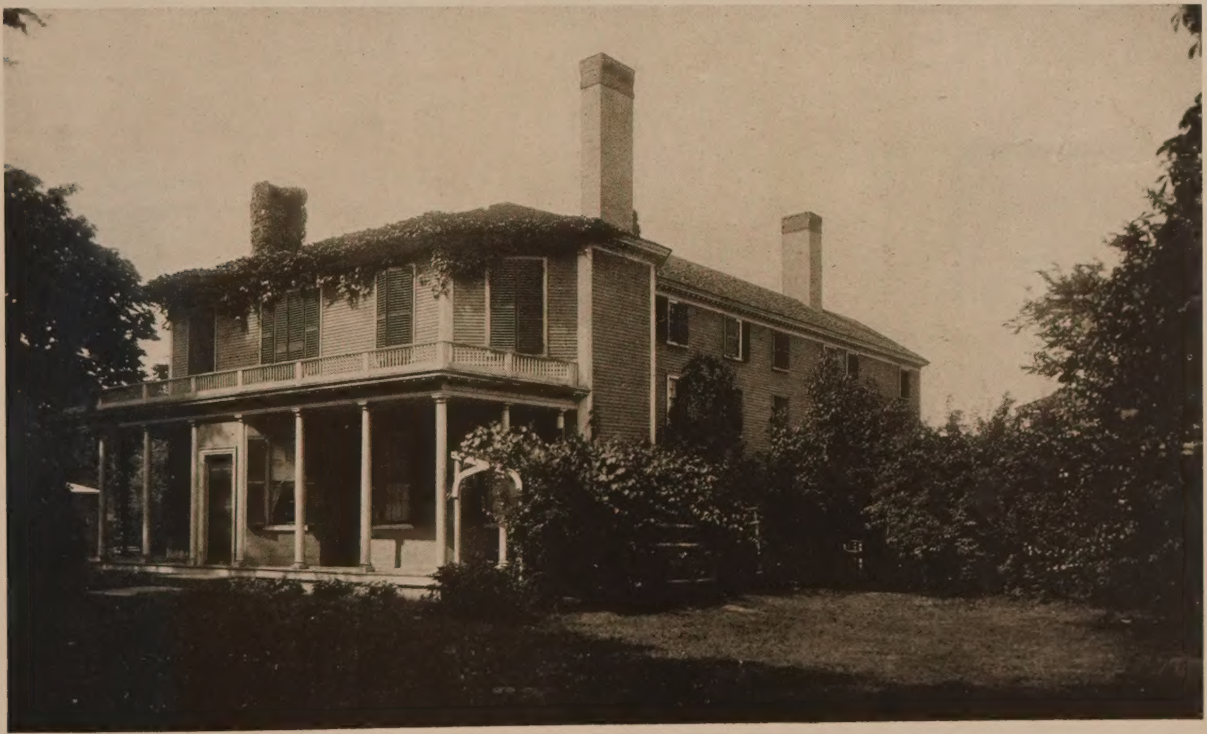
Some years ago the Antiquarian Society purchased the Lathrop house, which was built in 1808. This house is not characteristic of any type but instead it has violated all precedent in every one of its features. Instead of the usual straight front, part of this elevation is sloped, forming a bay on an angle.



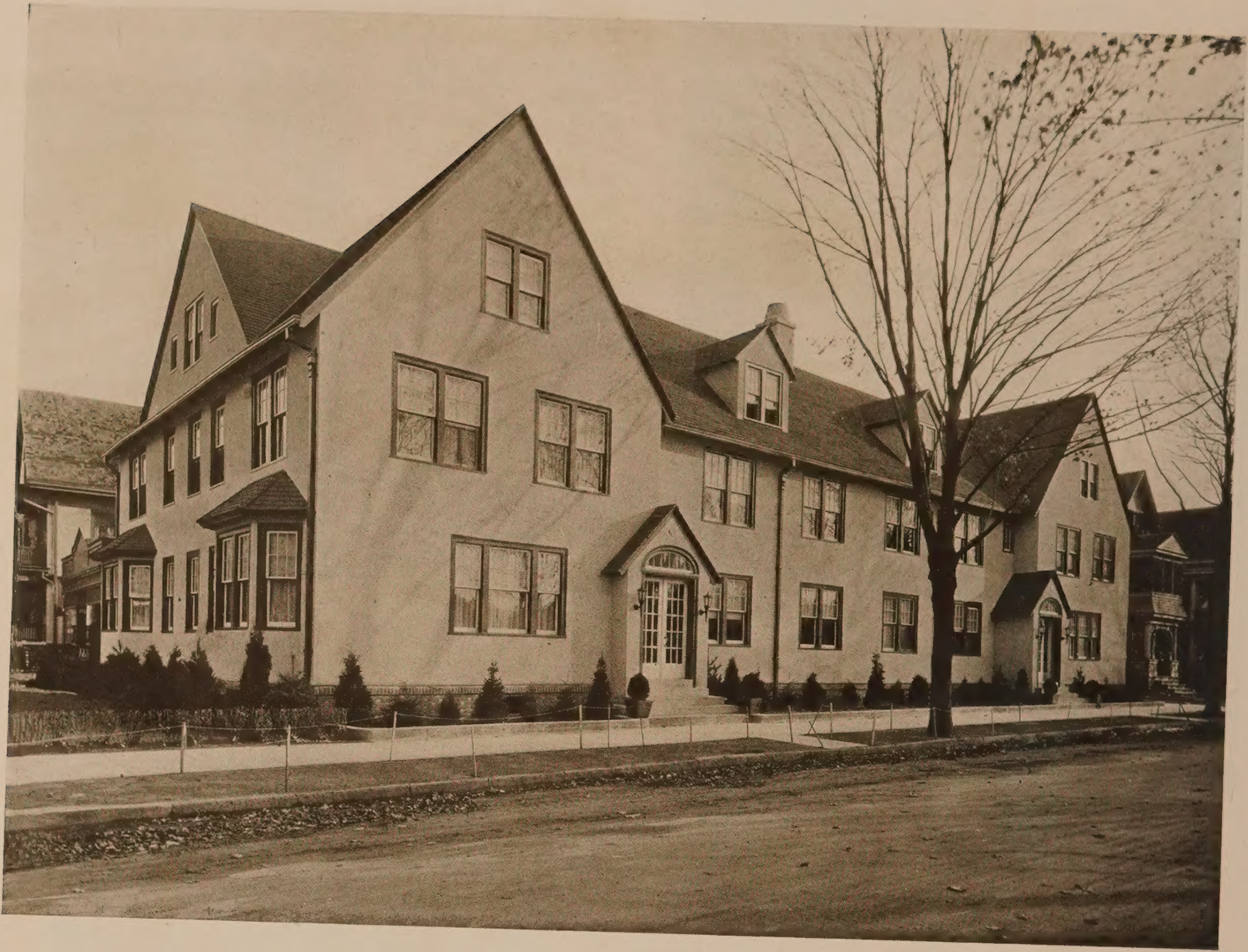
Staircase, Paty house, Plymouth (demolished).

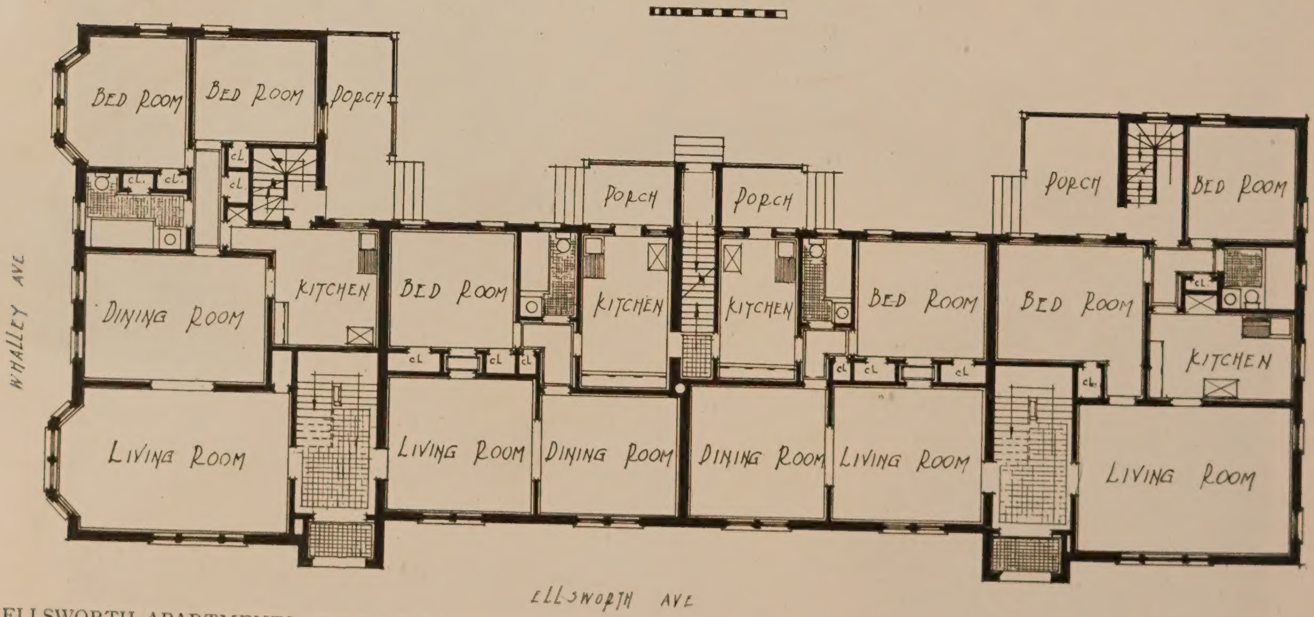
There is a porch along its entire frontage, which is in turn cut in two by a vestibule and small room combined that comes to the porch edge. This means that one must step out of cover to reach the porch. The scale of the window-openings are large in the front, but on the sides and rear are reduced, giving three stories in place of the two in front.

For the student of colonial architecture Plymouth offers many different types worth studying, a field little explored and an atmosphere of quaintness not often found. The surprising thing to the visiting architect is the lack of any adequate published information either in text or illustrations.



Lathrop house, Court Street, Plymouth, 1808. Now the home of the Antiquarian Society of Plymouth.





ELLSWORTH APARTMENTS, NEW HAVEN, CONN.

Jacob Weinstein, Architect.

Editorial and Other Comment

Some Significant Facts

THERE has been and continues to be a more or less vague and unsatisfactory discussion of the labor cost in building construction. We all know that wages are abnormally high, just as we all know that the cost of materials and the cost of living are high. The high cost of materials is dependent upon the first. Just how far dependent is made apparent by some valuable figures recently published by Col. Sanford E. Thompson, a member of the Hoover Committee on the Elimination of Waste. According to this authority:

"In the last analysis the great bulk of the 100 per cent which represents a completed building is made up largely of labor, with small increments for the value of the raw material in its original state and the use of funds for carrying on the development of this material. From figures at hand we estimate the direct labor entering into the construction of the building, together with labor in manufacture of materials and equipment and transportation to be at least 78 per cent. Carrying this a step farther to include the indirect labor, which is made of clerical work and general supervision from the home office, salesmen's salaries, etc., would add another 10 per cent, making the total direct and indirect labor some 88 per cent of the total cost of the building."

These facts, while they have undoubtedly made many investors hesitate, have in a measure made it evident to many that waiting is likely to be as much of a losing game as any possible present risk. No matter what the immediate future may hold in possible readjustments they will not be sufficient to deny for a long time a profitable return on present building.

It will take years, not a year or two, for building to equal the demand, especially in our cities where the congestion of population seems, in spite of living conditions, ever on the increase.

We note a tremendous increase in speculative suburban building in the vicinity of New York and there are indications of the same eagerness to profit by suburban demand all over the country. There seems to be a great need of two-family houses and we have been asked a number of times for issues in which plans for this type have appeared, and also for small suburban apartments for private ownership.

For a Uniform Building Code

IF the secretary of commerce succeeds in establishing a nation-wide standardization of building codes, plumbing codes, etc., he will have gone far toward putting an end to one of the sources of waste and haphazard methods. Standardization of building codes means standardization of material and quantity production, with a saving of thousands of dollars. There are hopeful signs that something will be accomplished and we believe it is largely only a matter of the right publicity.

Most of our building codes were devised, to be sure, with the best intentions, in most cases for the restraint of poor and dangerous construction. Since they were promulgated, however, many changes have been made in methods of construction and especially in the use of fireproof materials. These have made it possible to reduce the thickness of walls and permitted of lighter construction in many ways.

The Bureau of Standards working in harmony with the need for housing is carrying on tests that are of incalculable value.

There never was a time when theories were so ruthlessly subjected to the test of facts and it is a good sign of the times, for old theories of government have been put to the test and found wofully lacking, and old and obsolete theories of building and materials are on their way to the junk-heaps.

Building codes were devised to protect the public from the unscrupulous contractor and they are needed in these days of profiteering more than ever. But they can and will be established by scientific tests that will have a national, not merely local, authority.

The Lesson from Chicago

WE believe those of our readers who are not fortunate enough to see the "Bulletin of the Illinois Society of Architects" will be interested in seeing the following regarding the action of the unions after accepting the arbitration agreement and Judge Landis's award. The editor of the "Bulletin" asks "What's the Use":

"The arbitration agreement was finally entered into and the people of Chicago stood aside and watched developments. Most of them never for one moment were misled as to the ultimate outcome. They believed—in fact knew—that with such a man as Judge Landis as Arbiter that the rights of the public would be fully protected and that when his final award was made that it would have the unanimous endorsement not only of industry but of all citizens of Chicago with the exception perhaps of a few disappointed Bolsheviks among the union's official representatives.

"The arbitration proceedings and the final finding are now matters of history as is also the fact that a number of unions who had signed the arbitration proceedings and have on numerous occasions reaffirmed their intent to go along, have repudiated their agreements and locked their men out. This repudiation of the agreement entered into has brought more forcibly to the citizens of Chicago than it could have been by any other means the utter unreliability of any agreement executed by organized labor. It is utterly futile to expect agreements to be kept by organized labor. Agreements are usually and in most cases merely scraps of paper.

"The equity of the award and the fairness of the wage scale granted, the justice in penalizing those trades that refused to remove from their working rules objectionable restrictions, no thoughtful citizen can question.

"The blame for the failure of the unions to accept the Landis awards must be charged directly to the unions' representatives in the Building Trades Council and to no other cause. A most careful inquiry of the workmen themselves has disclosed the fact that the journeymen of all trades are, as a class, satisfied with the wage award given and are anxious and willing to proceed with work even at a lower wage rate than granted by Arbiter Landis but their bosses will not let them. This is the entire story.

"It is therefore evident that the only thing the building industry can do will be to proceed with work under the American plan, recognizing to the last paragraph every provision of every agreement entered into with the unions who are abiding by the award and these unions, if they are wise, will without question proceed with their tasks on any and all buildings working side by side with any and all workmen that may be secured to take the place of those on strike. It would appear that many of the building trades mechanics in Chicago are actually working under a condition of serfdom more autocratic than actual slavery. A slave is at least housed and fed. A striker sometimes gets a strike benefit and sometimes he does not."

Book Reviews

ARCHITECTURAL RENDERING IN WASH. By H. Van Buren Magonigle, F. A. I. A. Architect, Gold Medallist of the Architectural League of New York, Rotch Travelling Scholar, Fellow of the American Institute of Architects, Past President of the Association of the Alumni of the American Academy in Rome, Past President of the Architectural League of New York. With a Preface by Thomas K. Kimball, Past President of the American Institute of Architects. Charles Scribner's Sons, Publishers, New York.

Out of his years of experience as a practising architect with a nation-wide reputation as one of the most artistic and skilful draftsmen in his profession Mr. Magonigle has written a book that fills a unique place and promises to be for many years the authority and text-book on his chosen subject. It shows the full knowledge born of intimate practical experience in the handling of materials and the vision that goes with work that has been always dominated by a high artistic purpose and consideration for beautiful presentation.

The author's own drawings, both in black-and-white and color, have a quality and distinction that excite the admiration of the experienced practitioner and the enthusiasm of the student. There is no other book on the subject that compares with this, either in comprehensiveness or attention to those details that only long experience can make clear and positive in the handling. The mere Table of Contents—The Preliminary Steps, Rendering, Quarter, Half, or Three-Quarter Color, Rendering Sections, Rendering Detail Drawings, Rendering Places, The Properties of Pigments, Free Color and Free Sketching—gives but a cursory idea of the amount of fulness with which all of these topics are discussed. In the chapter on Preliminary Steps, for instance, the author gives a complete outline of the materials and preparation for drawings. We note such sub-heads as Paper, Joining Sheets, Cloth-backed Papers, Selecting the Paper, Mounting, Cleanliness, Transforming Studies to Final Paper, Whites in Pitches of Platforms, Foregrounds, etc., Studies of Larger Scale, Preserving the Surface of the Paper, Penciling in, Rubbing on, Transfer Paper, Lightening up, Toning the Ink, The Line and Its Quality, Planes versus Lines, The Ruling Pen, Free-hand Pens, Shade-Line Drawings, Casting Shadows, Brushes, India Ink, Pigments as Toning Agents.

The same care for detailed and specific instruction marks every chapter with the result of making it possible for the student to attack the most difficult problems with the assurance of at least a full knowledge of the right approach. Perhaps no chapters in the book will prove more valuable than those on The Properties of Pigments and Full Color and Free Sketching. In these Mr. Magonigle gives the results of his own admirable handling of color—many will recall his easel paintings in both oil and water-color—and includes his own and the working palettes of such other distinguished draftsmen as Jules Guérin, Otto R. Eggers, Birch Burdette Long, Frank Hazell, Hobert G. Ripley, and Paul Philippe Cret.

"The book is for the student in the School of Architecture, the draftsman in the office, the novice, and the experienced man."

It has already received high praise from leading teachers in several of the foremost architectural schools, and there is no doubt of its great value as well in the teaching of art in schools given to the study of art in general. The student of design, illustration, and even the painter will find it a book of inestimable value.

The numerous illustrations and diagrams include a colored frontispiece from a water-color drawing by Jules Guérin of the Library of Columbia University and drawings by Otto Eggers, Birch Burdette Long, Paul Philippe Cret, Frank Hazell, Ernest Peixotto, the author, and others add greatly to the illumination of the text.

Of course, beyond all technic lies the intangible element of personality, and it must be a dull reader who will not find inspiration and encouragement in this book. As Mr. Magonigle says in closing: "So much for method and methods; but beyond these lies that inner vision without which all work however skilfully done is empty and soulless."

THE ENJOYMENT OF ARCHITECTURE. By Talbot F. Hamlin. New edition. Fully illustrated. Charles Scribner's Sons, Publishers.

Note.—The following review of Mr. Hamlin's delightful book was written by Colonel W. A. Starrett, who read it on shipboard while on a recent trip to China and Japan:

The attention of any one having the slightest interest in the subject is sure to be arrested by the title of Mr. Hamlin's book, "The Enjoyment of Architecture," and to open it is almost sure to lead one to read it from cover to cover before laying it down, so fascinatingly is the subject unfolded and so clearly is the story told. For, under Mr. Hamlin's skilful handling, it becomes a story, almost a romance.

The book is frankly American and in a way an argument for American architecture, although always in the light of the classical forms. The author opens by speaking to the average cultivated American and adroitly leads him into the subject, not through a maze of technicalities, but by pointing out the pleasure of architecture. The reader's recognition of the very emotions that have always stirred him, now so clearly separated and arranged before him, leads him to the more intelligent contemplation of what he has so long been observing.

Any reflection that after all one is being led into a technical complex is met almost before it can arise, by the frank admission that "there is no greater obstacle to the appreciation of architecture than the fog of criticism that hangs all about it." And from this point the reader is led into a simply told and lucid analysis of the laws of form in architecture. The well-chosen photographic illustrations, together with the simple little pen-and-ink sketches, leave the reader in no doubt if he will but apply himself to the pregnant meaning of each sentence. It is in the introductory chapters that the foundation of the subject is laid.

If the reader can conjure up any justification for the "fog of criticism" after reading the chapters on form and materials, it can easily be dispelled by a moment's reflection upon the continual appeal to the simple requirements of good taste. Through these chapters it is remarkable how completely the author has submerged himself, and his tolerance of divergent views, which, however, he never allows to cast doubt upon the underlying sound principles he is elucidating. He even gives a resounding rap to those who have done violence to the canons, but in no spirit of carping criticism. Rather he makes a constructive protest against those who in his opinion have violated the fundamental principles. But immediately he returns to self-effacement, leading rather than pushing his reader into the subject, and all with a telling subtlety.

The test of the reader's instinct for beauty in architecture will come in the chapters on decorative material and ornament. If he is not thrilled by the discussion and the romantic weaving of the origin and history of ornament, with the discussion of its meaning and uses, then he had better lay down the book, for not only is the text replete with a wealth of instruction but in the skilful handling these chapters fairly vibrate with the whole spirit of the art. It is here that the literary quality of the book seems fairly to merge with the spirit of the subject, and the reader's well-springs of appreciation must indeed be dormant if he is not moved with enthusiasm over the masterful way in which the subject is presented.

In the chapter on planning, the author of necessity drops back to very elementary discussion, for after all he is addressing the layman. It reminds one, however, that heretofore even the architects must have been among the most thoughtful and appreciative of the audience. Instructive as the chapter is it is a welcome breathing space for the more technically trained, and comes as a fitting interlude before the climax of the book, a splendid discussion of style.

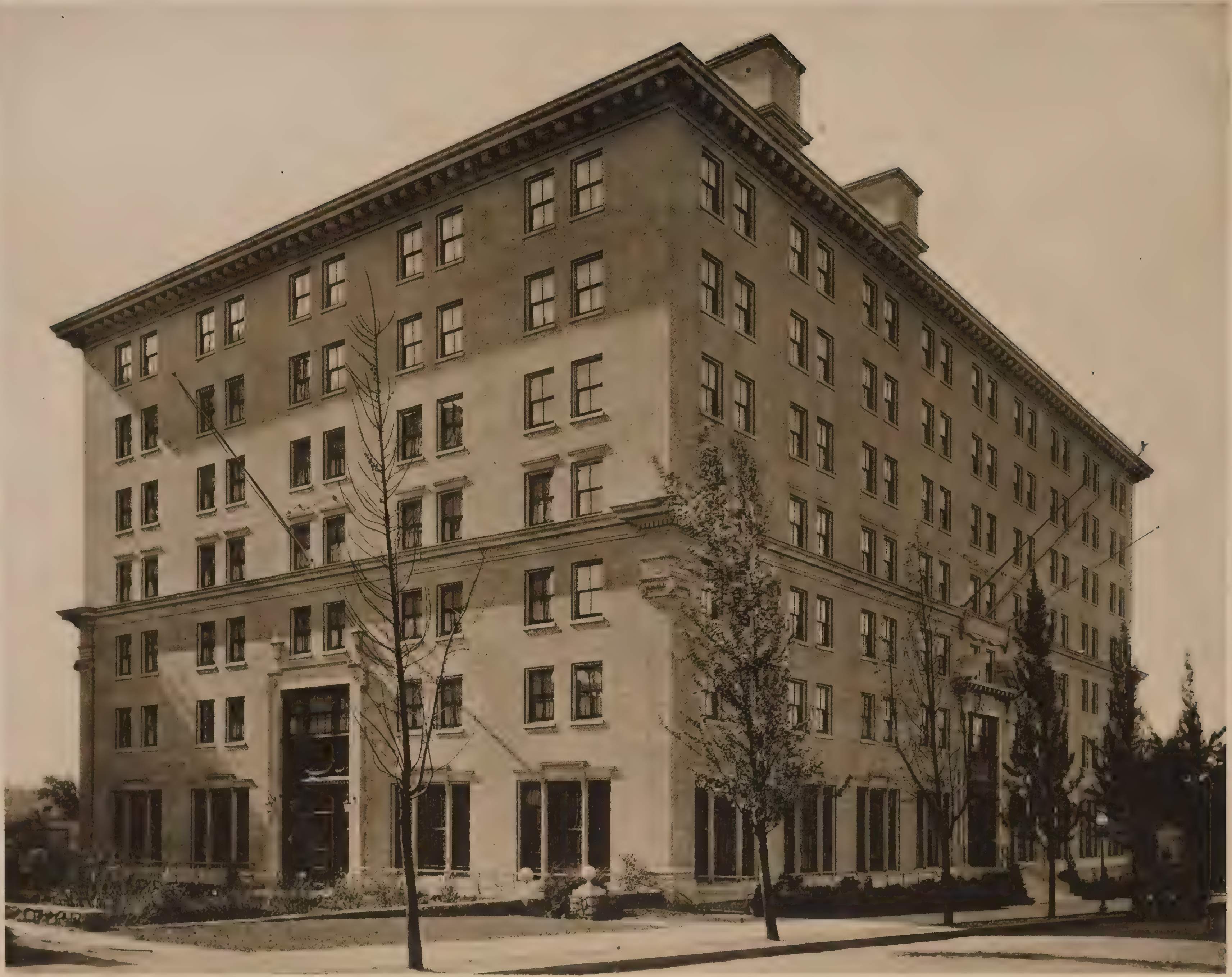
Here the author reveals himself as a master of his subject. His literary skill, his enthusiasm, and his profound knowledge join hands in producing a discussion of style that is in itself a classic. The brief but poignant outline of the history of architectural forms, with side-lights on the political and sociological influences, the necessities that governed and the cultural influences, are all interwoven into the fabric of the argument with a consummate skill that is seldom equalled. And not the least of the nature of this splendid discussion is the liberality of the author's view-point.

If the book contained nothing else, the chapter on style would give it standing as a standard text-book, which every lover of good architecture from the veriest tyro to the accomplished practitioner could well afford to follow.

There is a fine conclusion in the chapter on the social value of architecture which one might almost regard as an epilogue, although a short epilogue concludes the volume. It reminds one of the friendly discussion that the author's auditors might have as they were shaking hands preparatory to departing. It reviews the tremendous field that architecture covers and touches upon the profound influences, good and bad, that like architectural and constructional effort produce. The author's virility again asserts itself when he lays squarely at the door of industry and capital their responsibilities and the evil social consequences that are sure to entail upon the neglect or indifference toward this all-important subject.

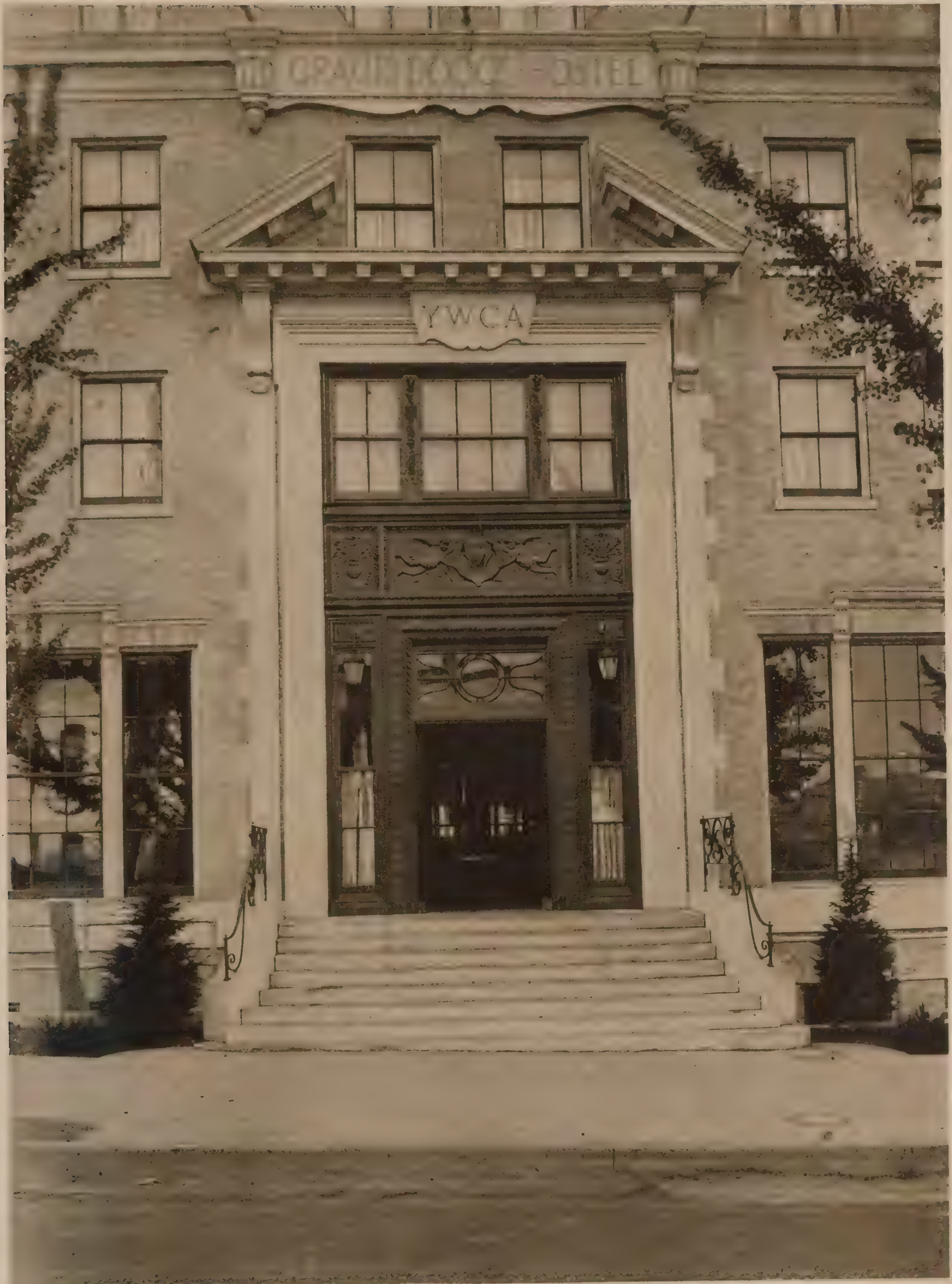
In reviewing so good a book it might seem a contradiction to suggest that it could be different, but its very excellence suggests the following comments. While the volume has a well-chosen selection of illustrations, one wishes there might be more of them.

Though the book is addressed primarily to the layman, it could well be a guiding text-book for any architect whatever his standing.



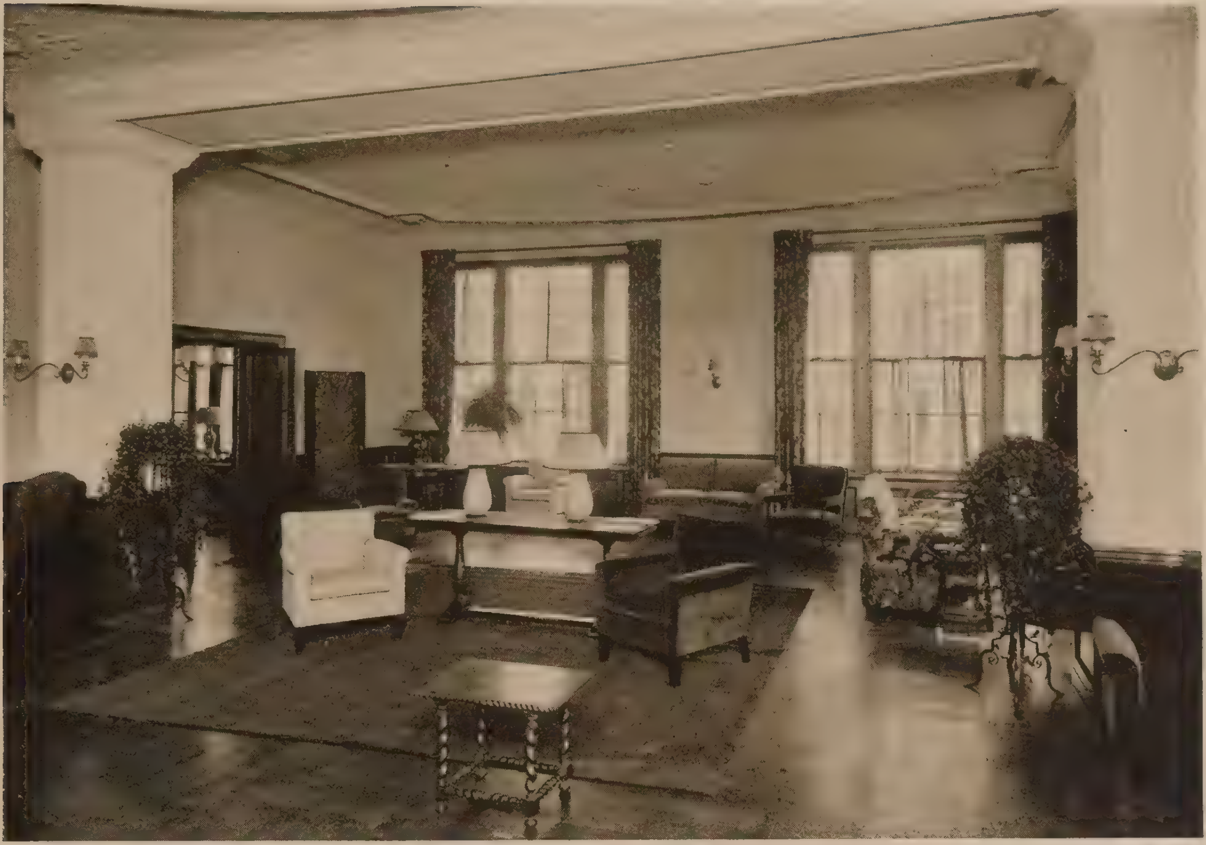
GRACE DODGE HOTEL, WASHINGTON, D. C.

Duncan Candler, Architect.

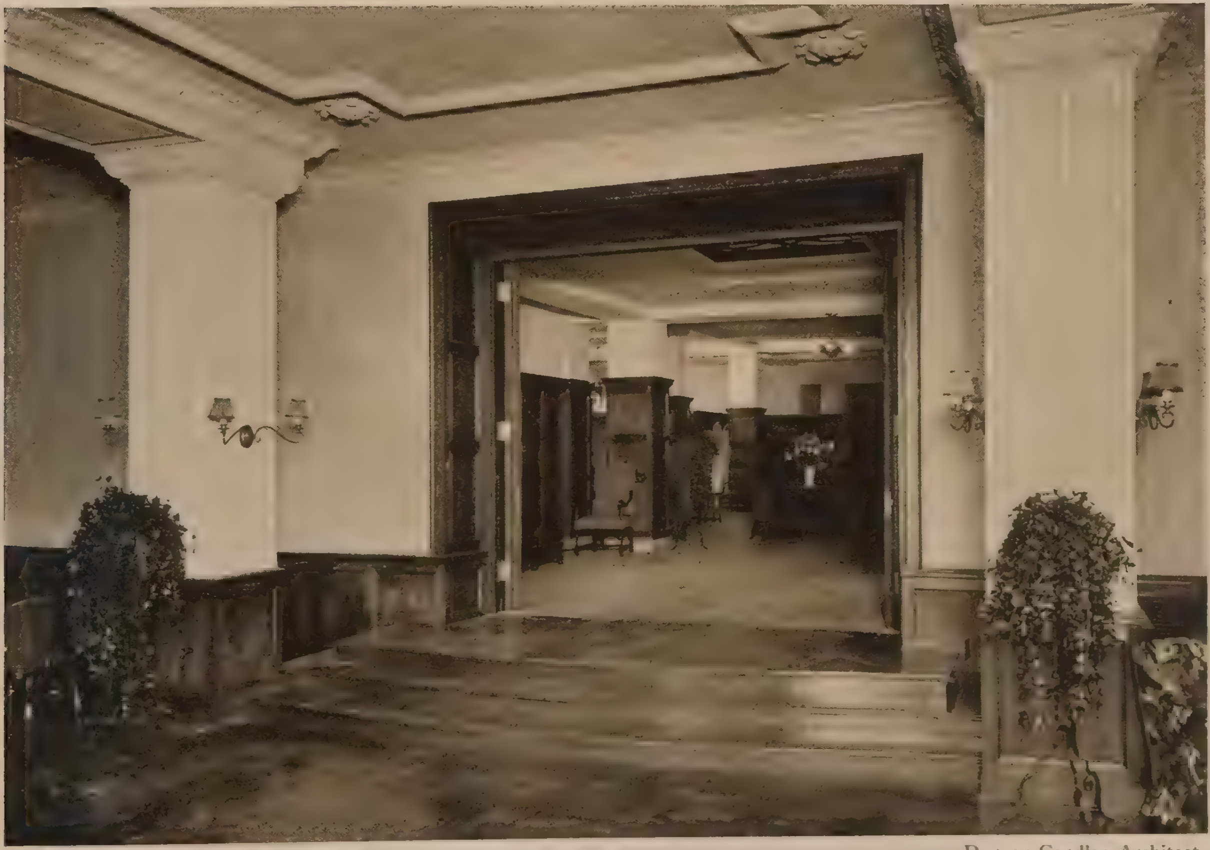


MAIN ENTRANCE, GRACE DODGE HOTEL, WASHINGTON, D. C.

Duncan Candler, Architect.



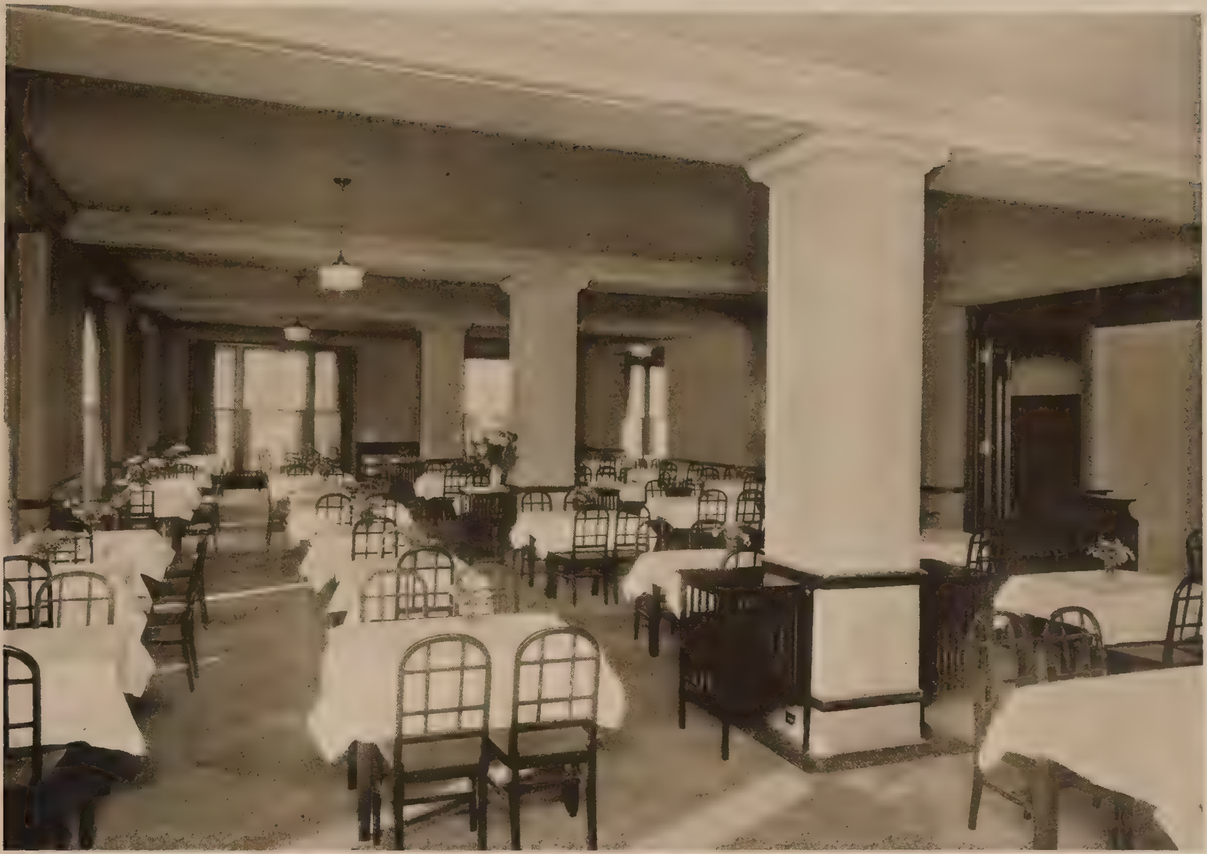
LOUNGE.



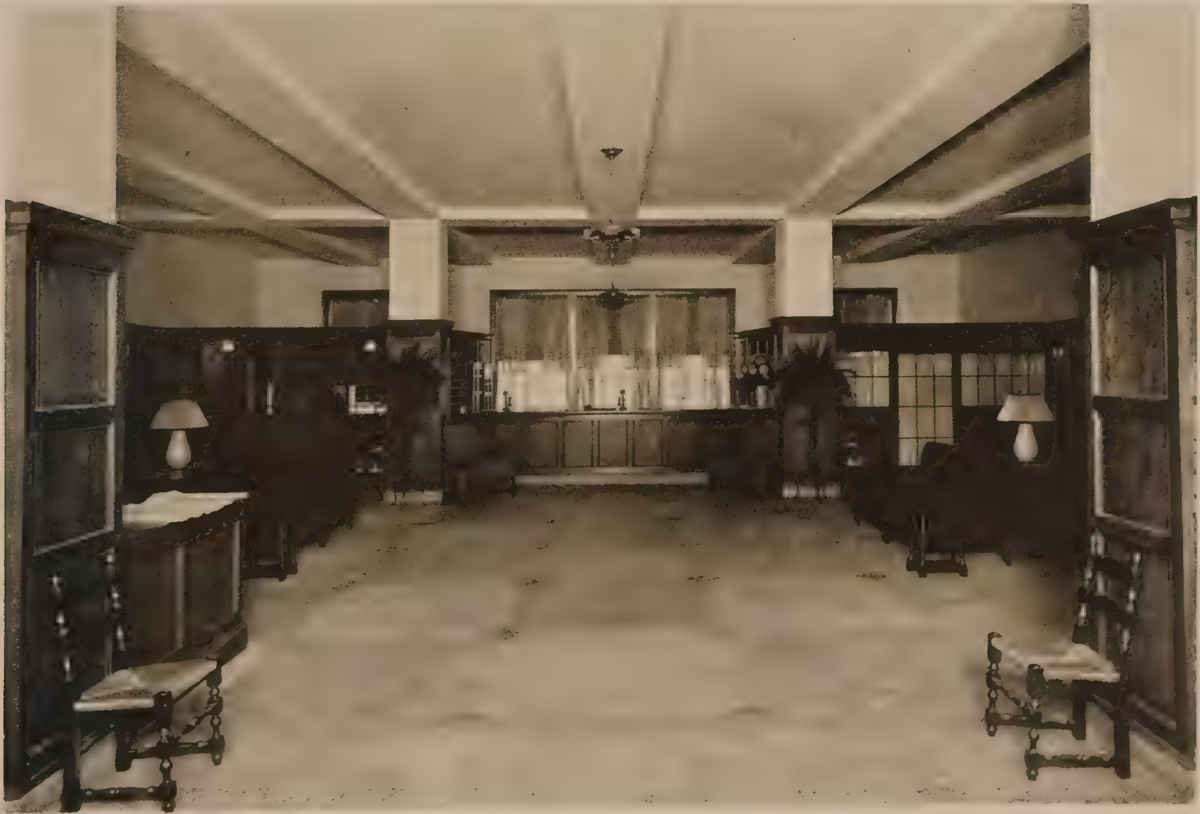
LOUNGE, LOOKING INTO LOBBY.

Duncan Candler, Architect.

GRACE DODGE HOTEL, WASHINGTON, D. C.



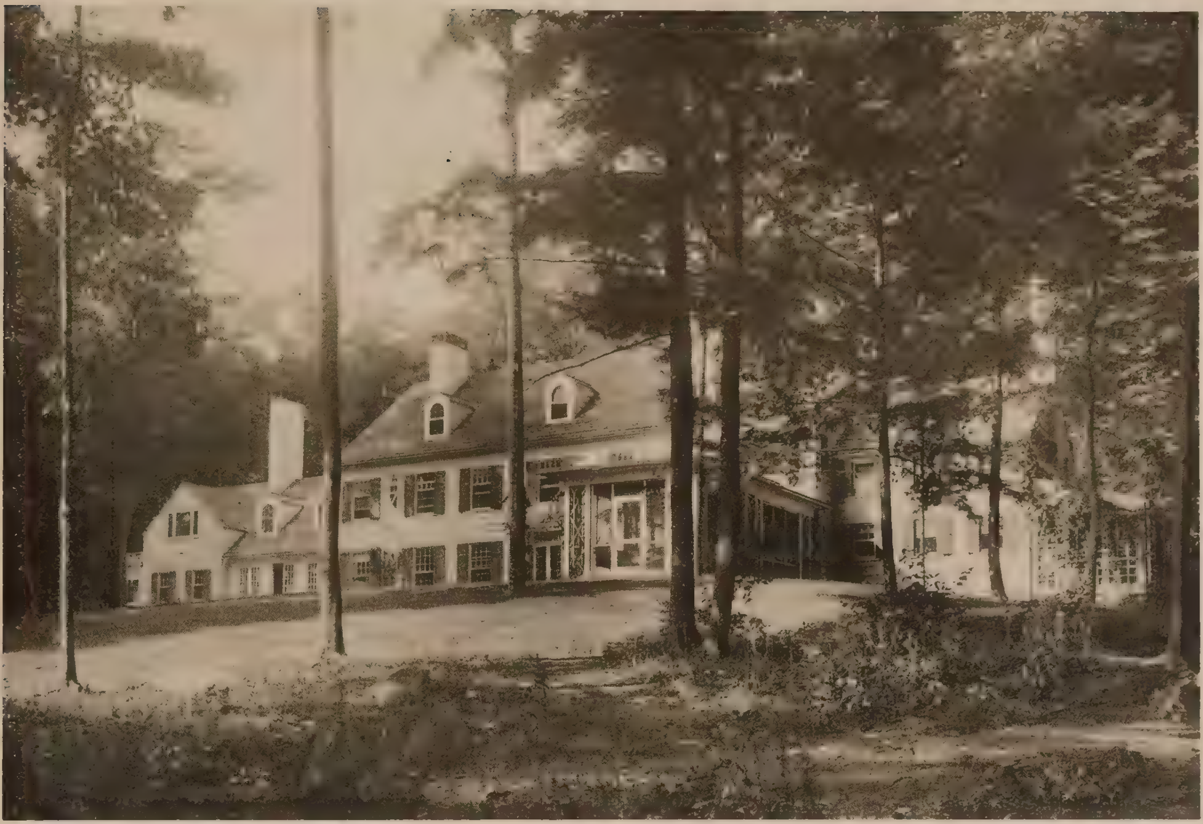
MAIN DINING-ROOM.

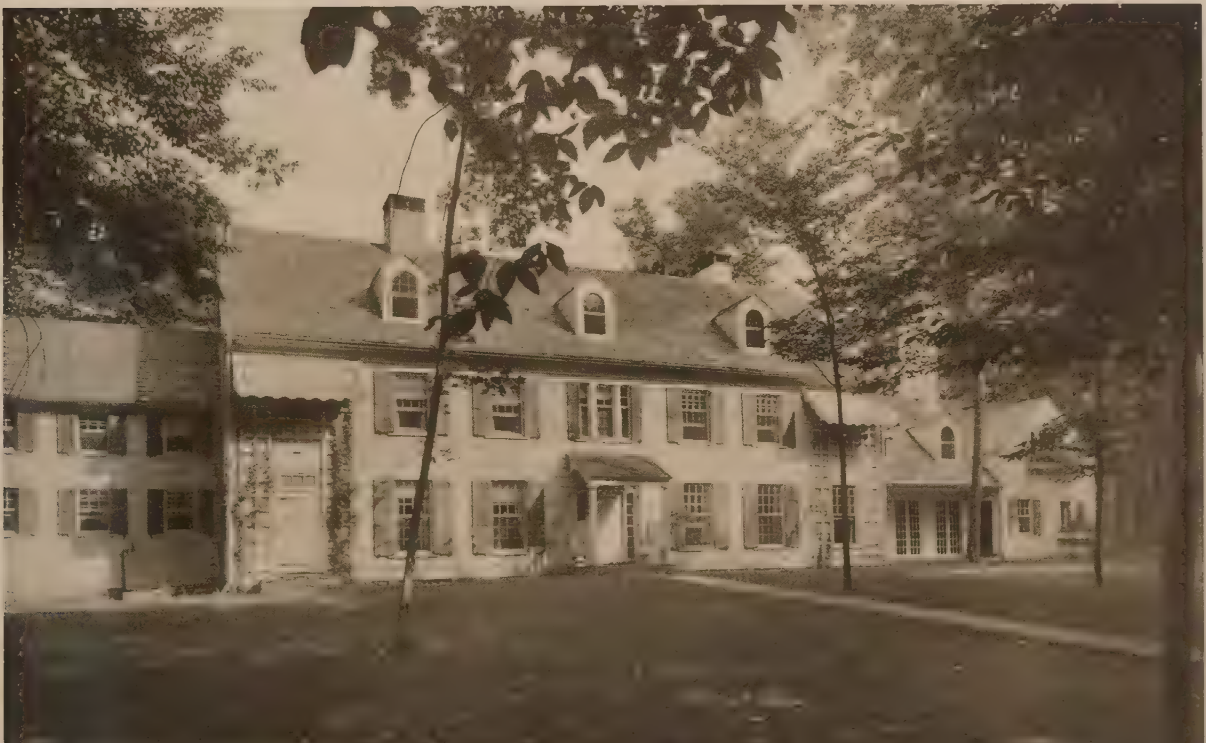


VESTIBULE AND LOBBY.

Duncan Candler, Architect.

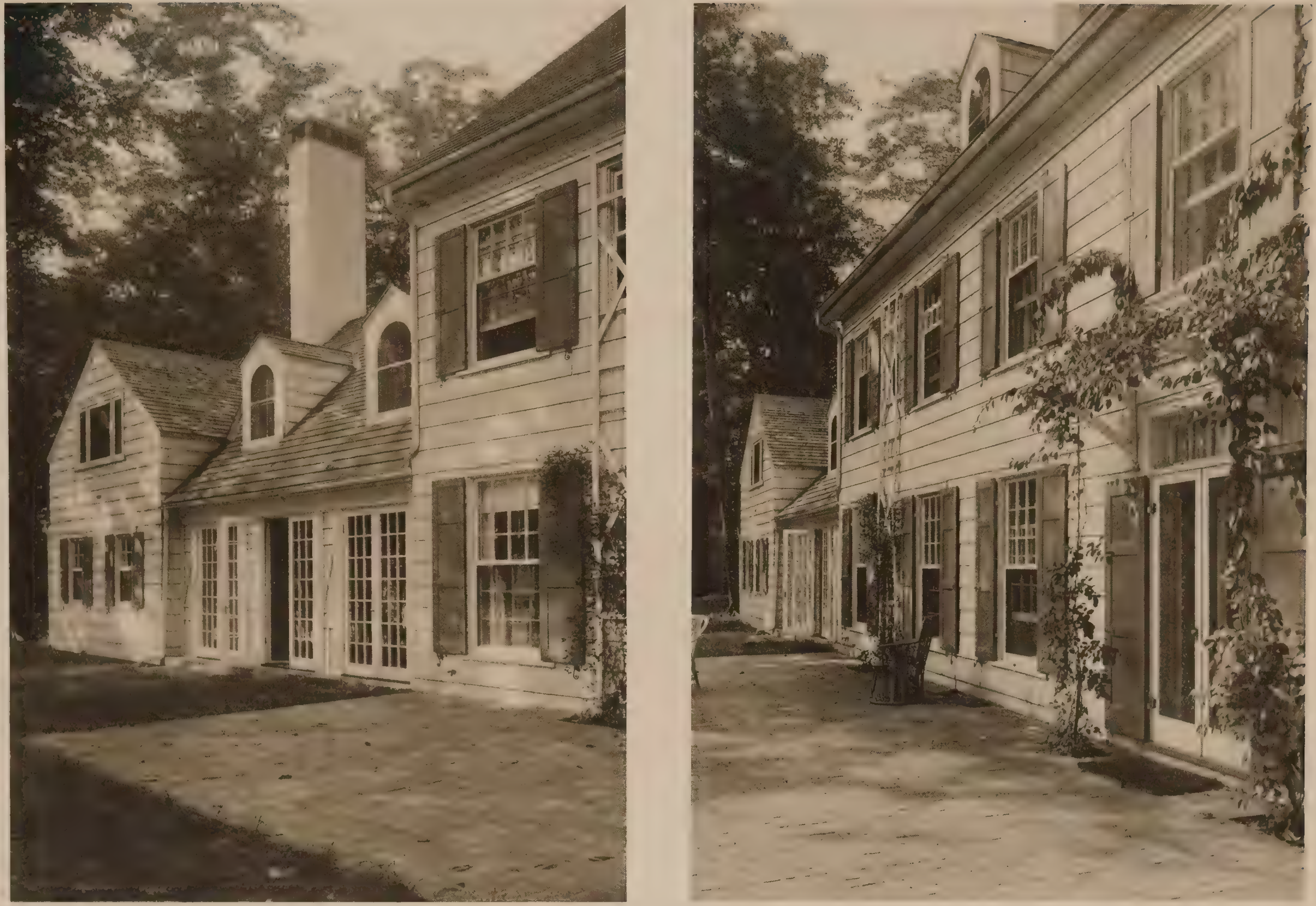
GRACE DODGE HOTEL, WASHINGTON, D. C.





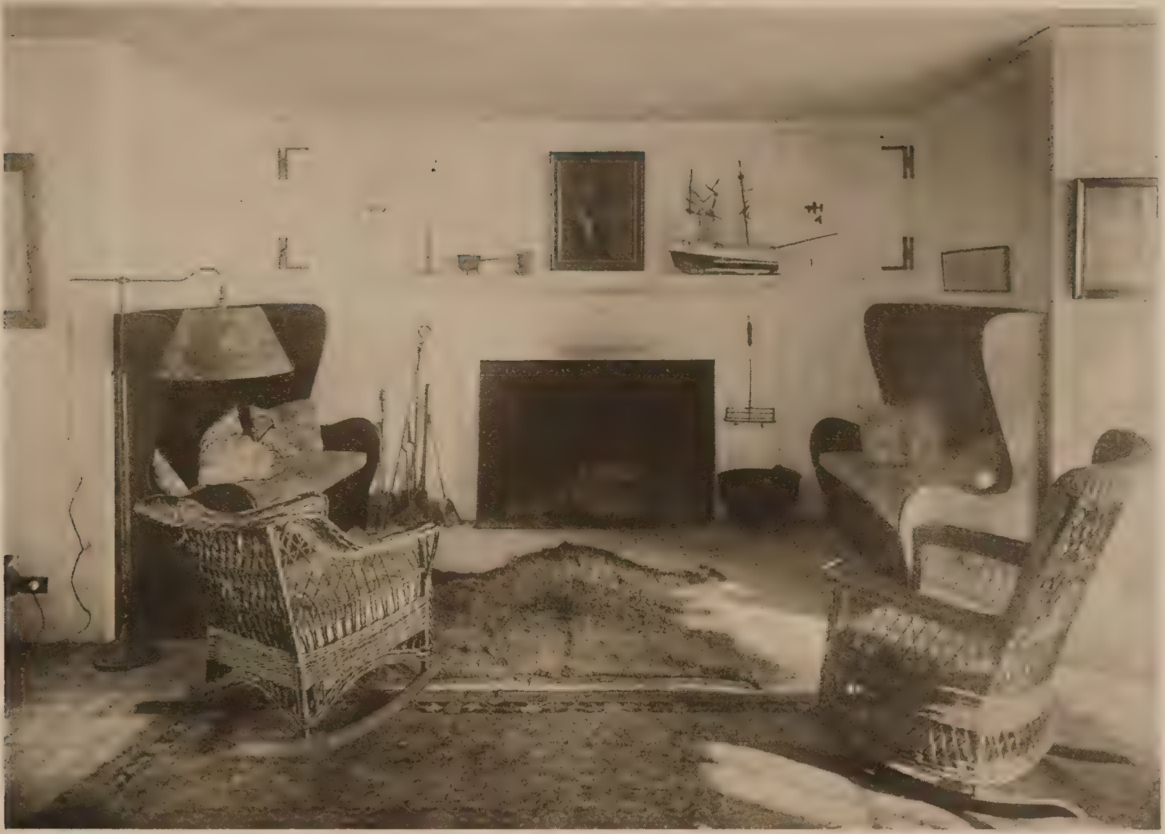
Edward S. Hewitt, Architect.

RESIDENCE, MR. AND MRS. SIDNEY HOMER (LOUISE HOMER), LAKE GEORGE, N. Y.

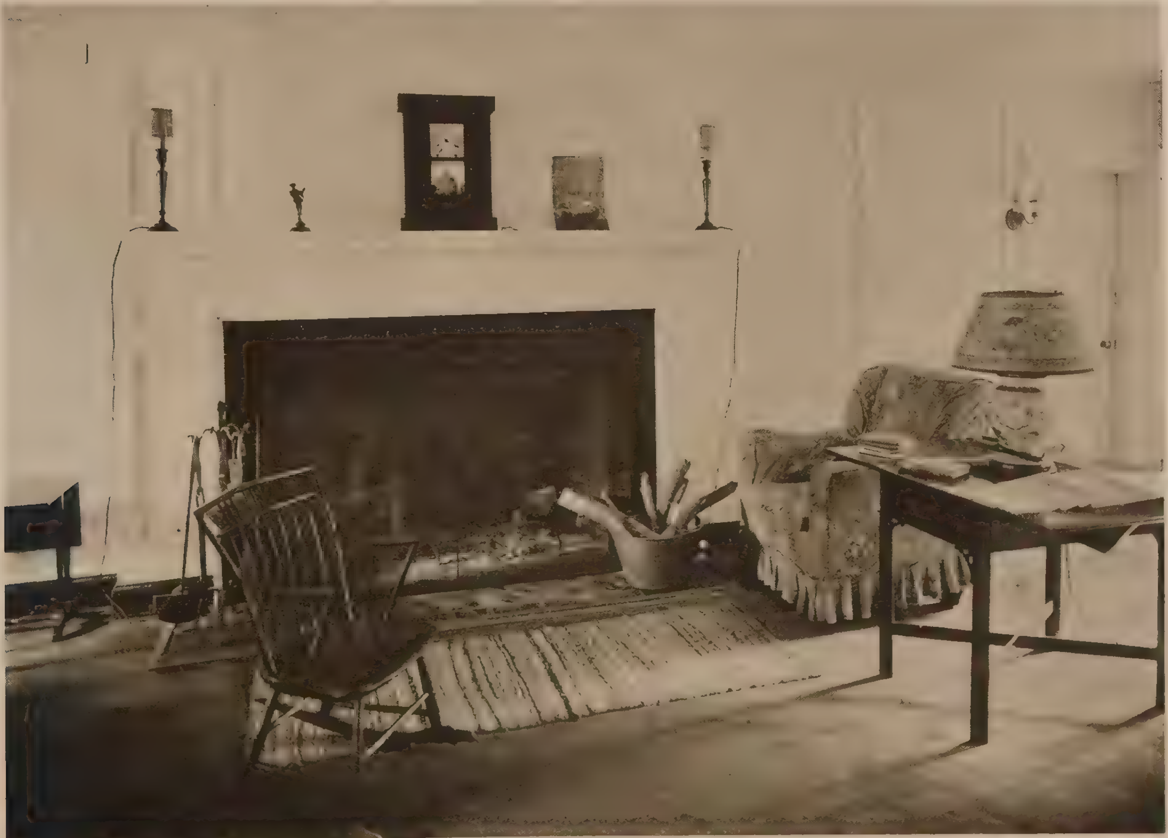


DETAILS, RESIDENCE, MR. AND MRS. SIDNEY HOMER (LOUISE HOMER), LAKE GEORGE, N. Y.

Edward S. Hewitt, Architect.



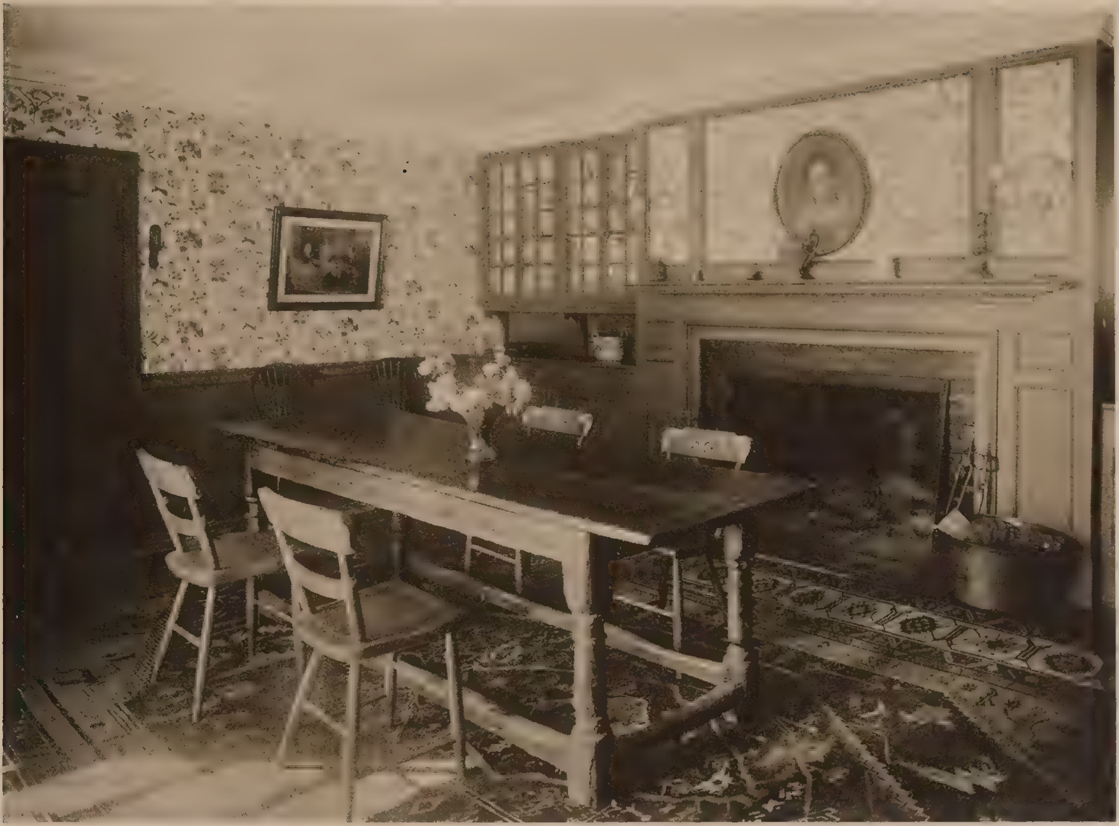
PORCH FIREPLACE.



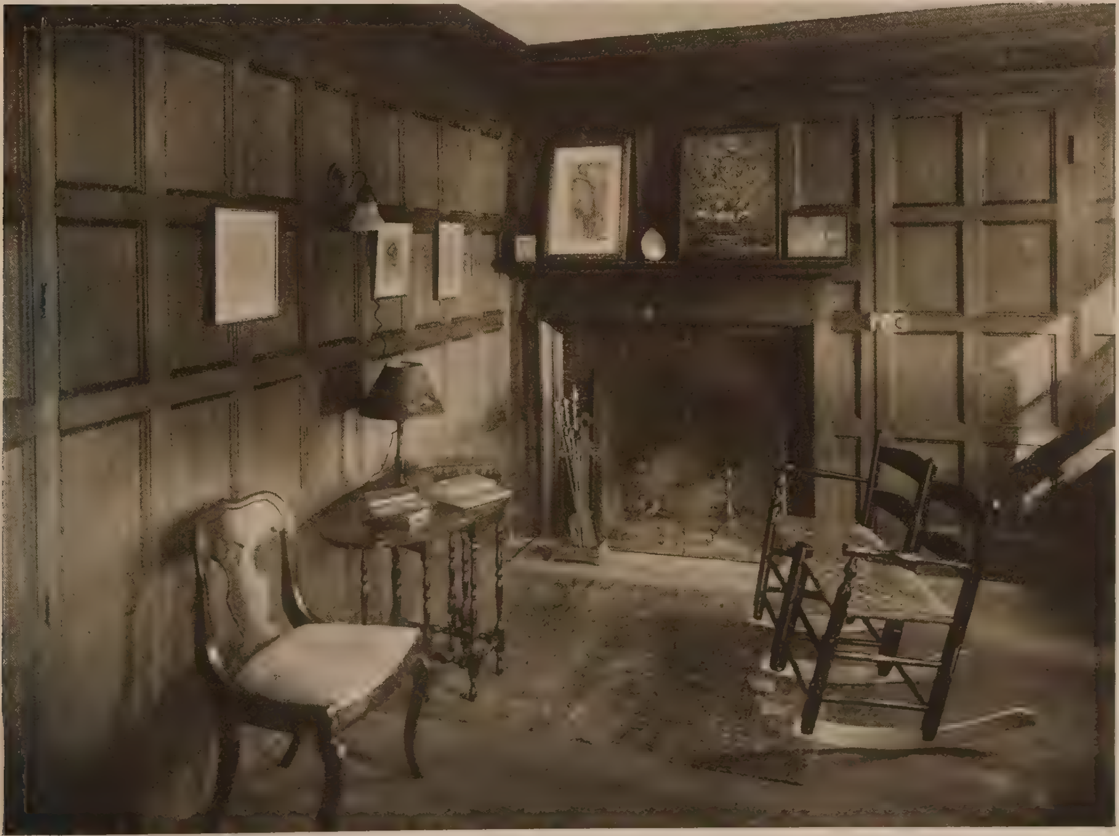
LIVING-ROOM.

Edward S. Hewitt, Architect.

RESIDENCE, MR. AND MRS. SIDNEY HOMER (LOUISE HOMER), LAKE GEORGE, N. Y.



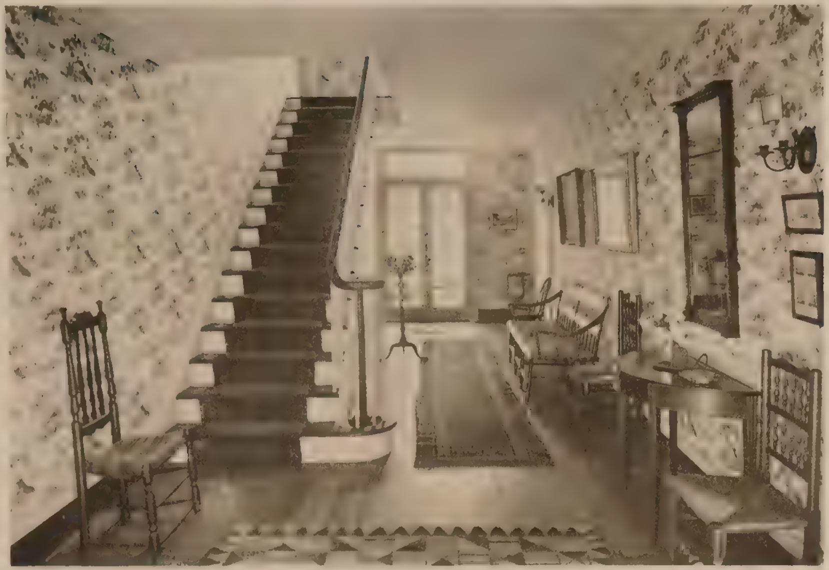
DINING–ROOM.



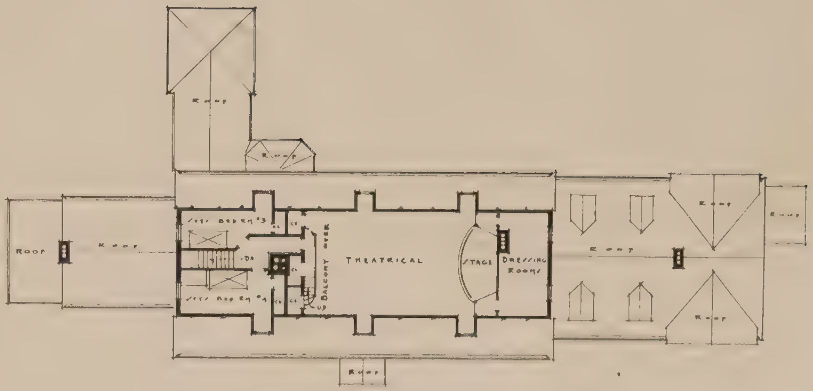
STUDY.

Edward S. Hewitt, Architect.

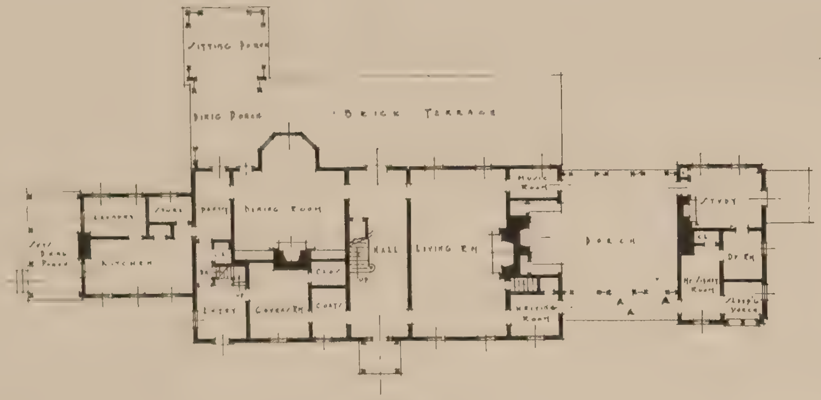
RESIDENCE, MR. AND MRS. SIDNEY HOMER (LOUISE HOMER), LAKE GEORGE, N. Y.



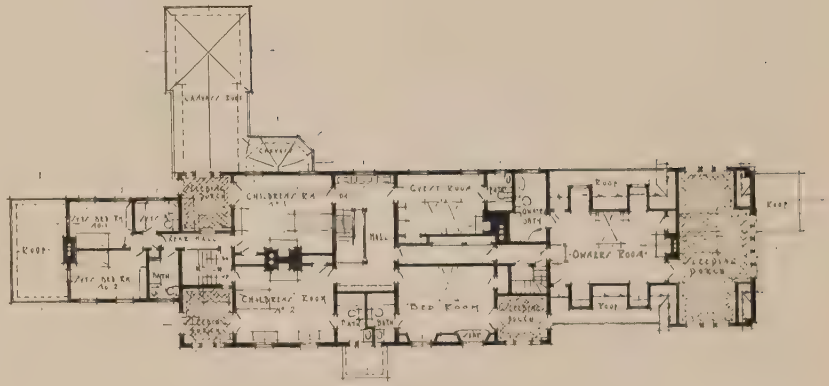
HALL.



ATTIC FLOOR PLAN
SCALE 1/16" = 1'-0"



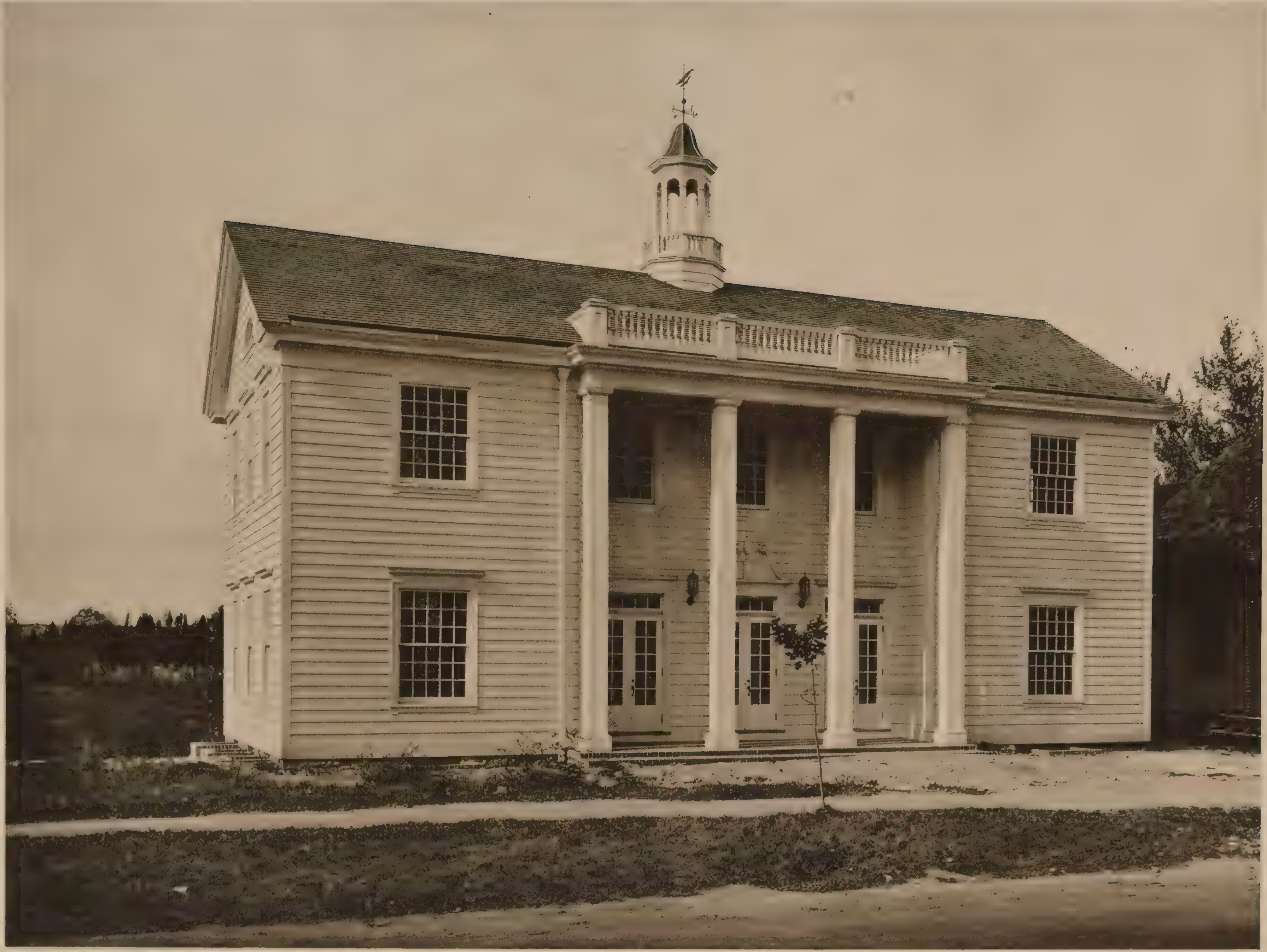
FIRST FLOOR PLAN
SCALE 1/16" = 1'-0"



SECOND FLOOR PLAN

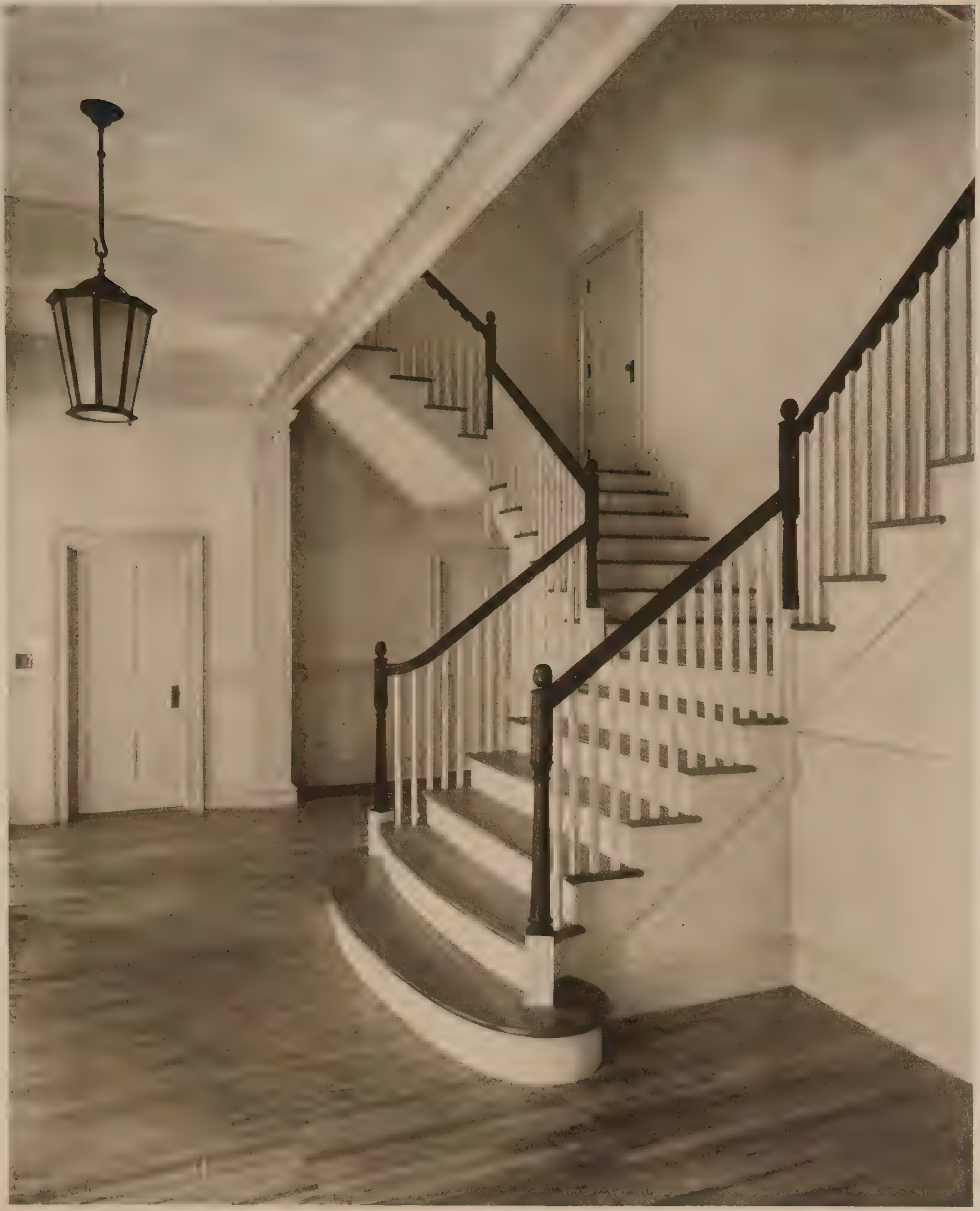
RESIDENCE, MR. AND MRS. SIDNEY HOMER (LOUISE HOMER), LAKE GEORGE, N. Y.

Edward S. Hewitt, Architect.

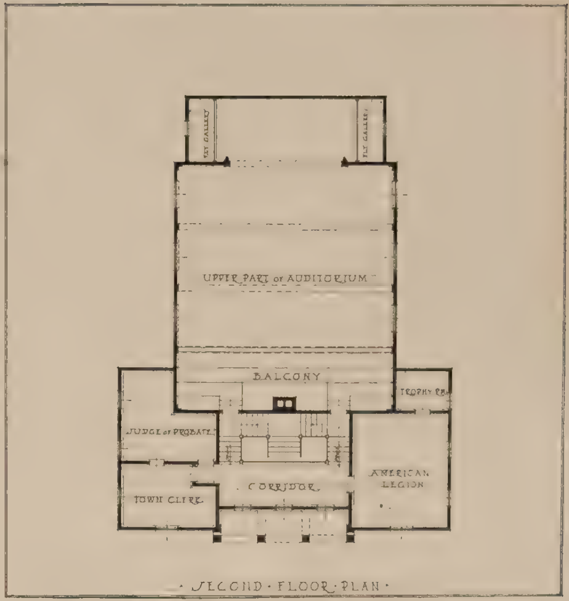


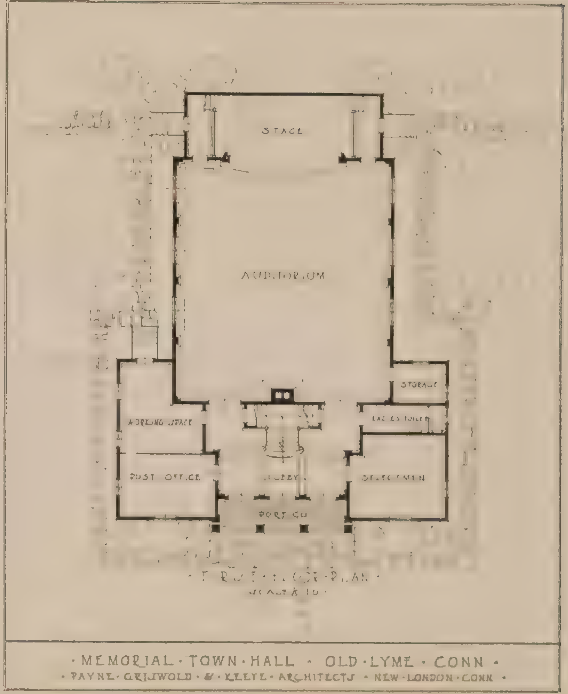
MEMORIAL TOWN HALL, LYME, CONN.

Payne, Griswold & Keefe, Architects.

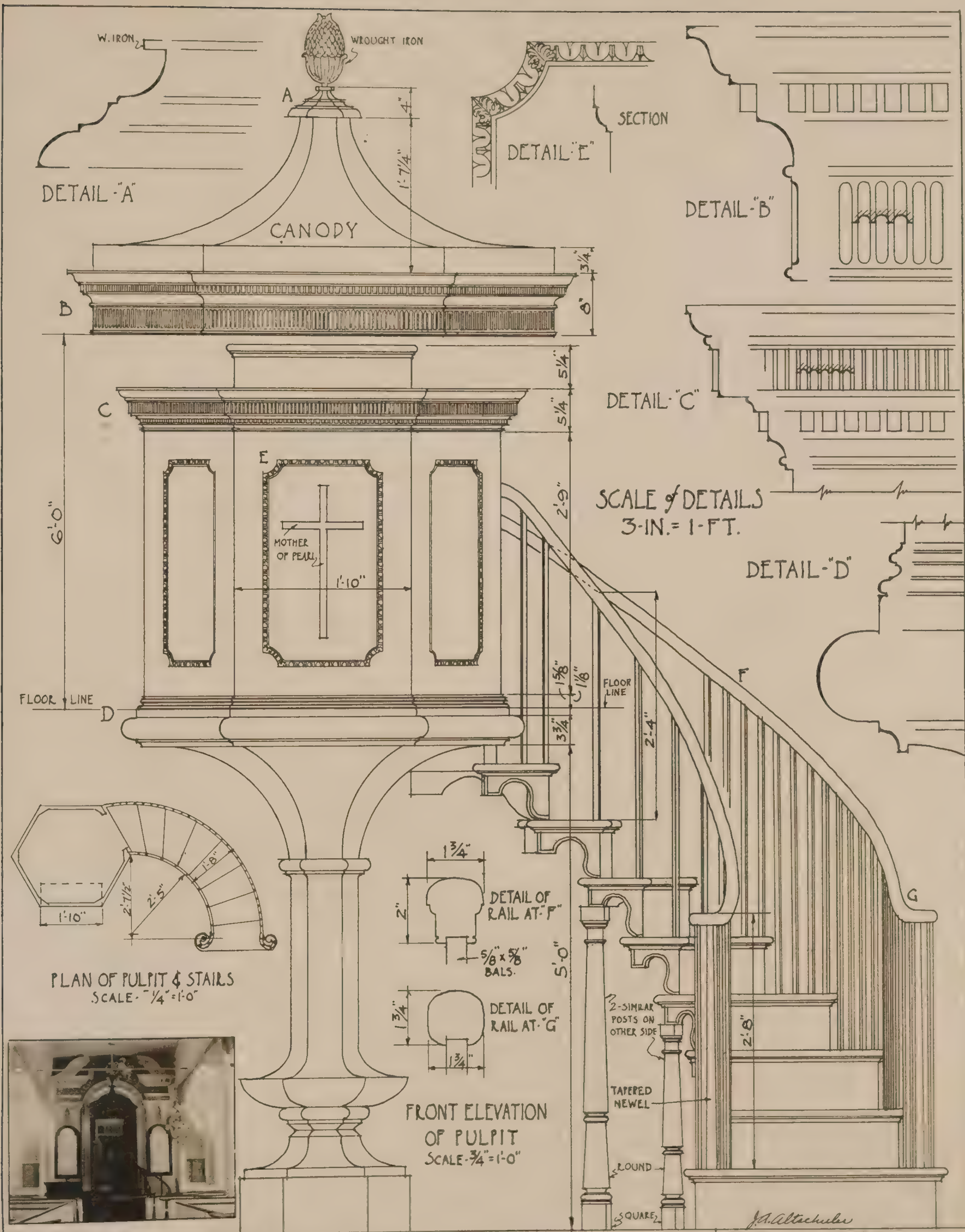


LOBBY AND MAIN STAIRCASE, MEMORIAL TOWN HALL, LYME, CONN.





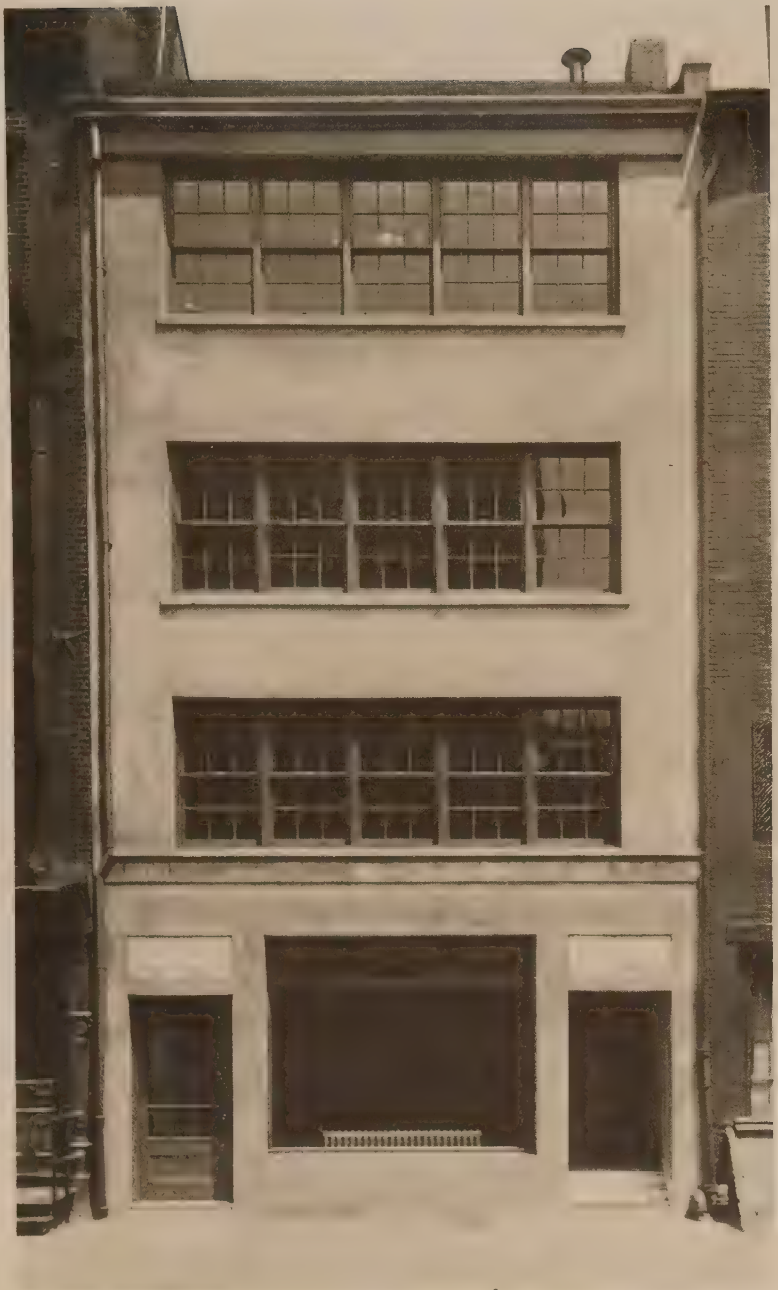
Payne, Griswold & Keefe, Architects.



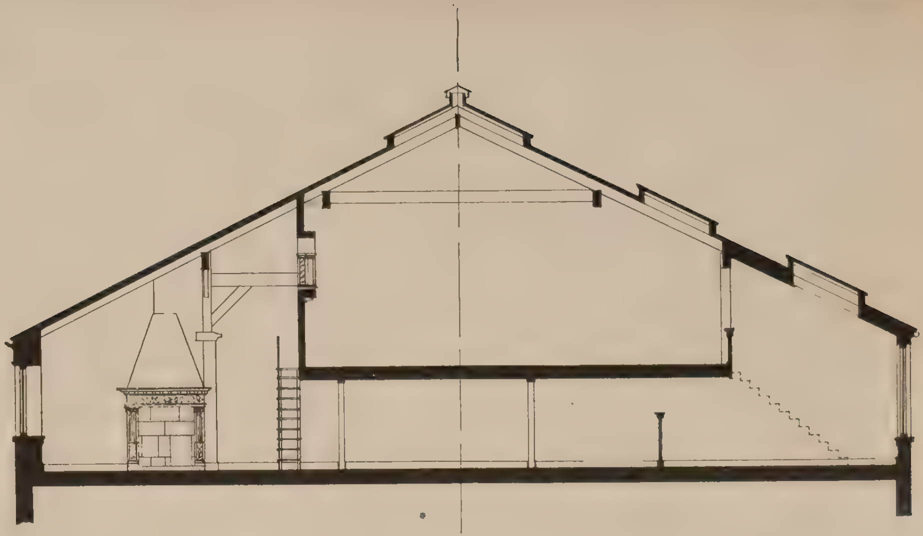
COLONIAL ARCHITECTURE
of the
CAROLINAS

PULPIT - ST. JAMES CHURCH
DATE - 1713 - OTRANTO - S. C.

MEASURED & DRAWN
by
J. A. ALTSCHULER



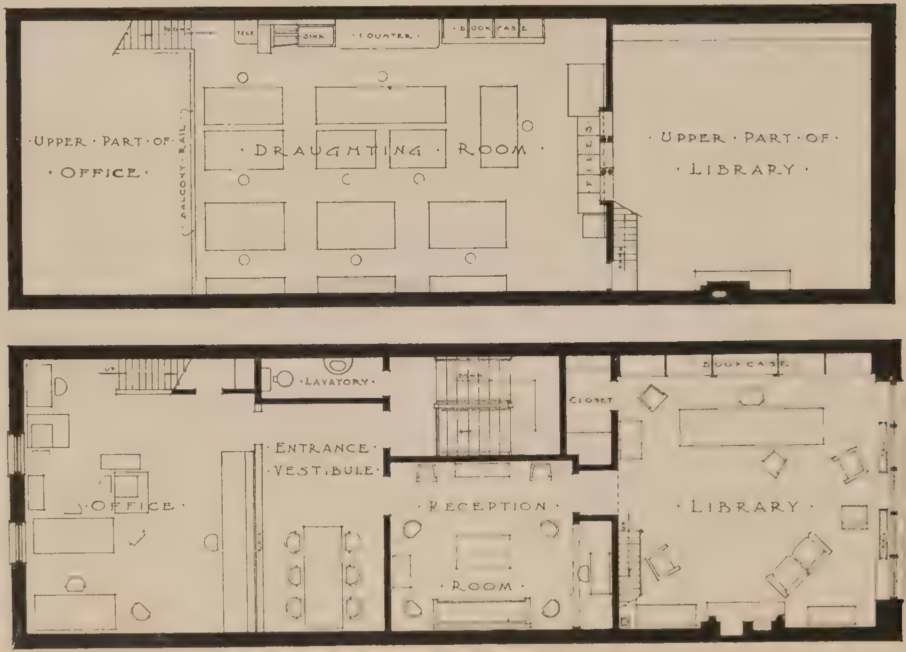
OFFICE BUILDING, 119 BROAD STREET, NEW YORK (ALTERATION).



The land on which this building was built was filled in shortly after the Revolution, but fire destroyed all the original buildings.

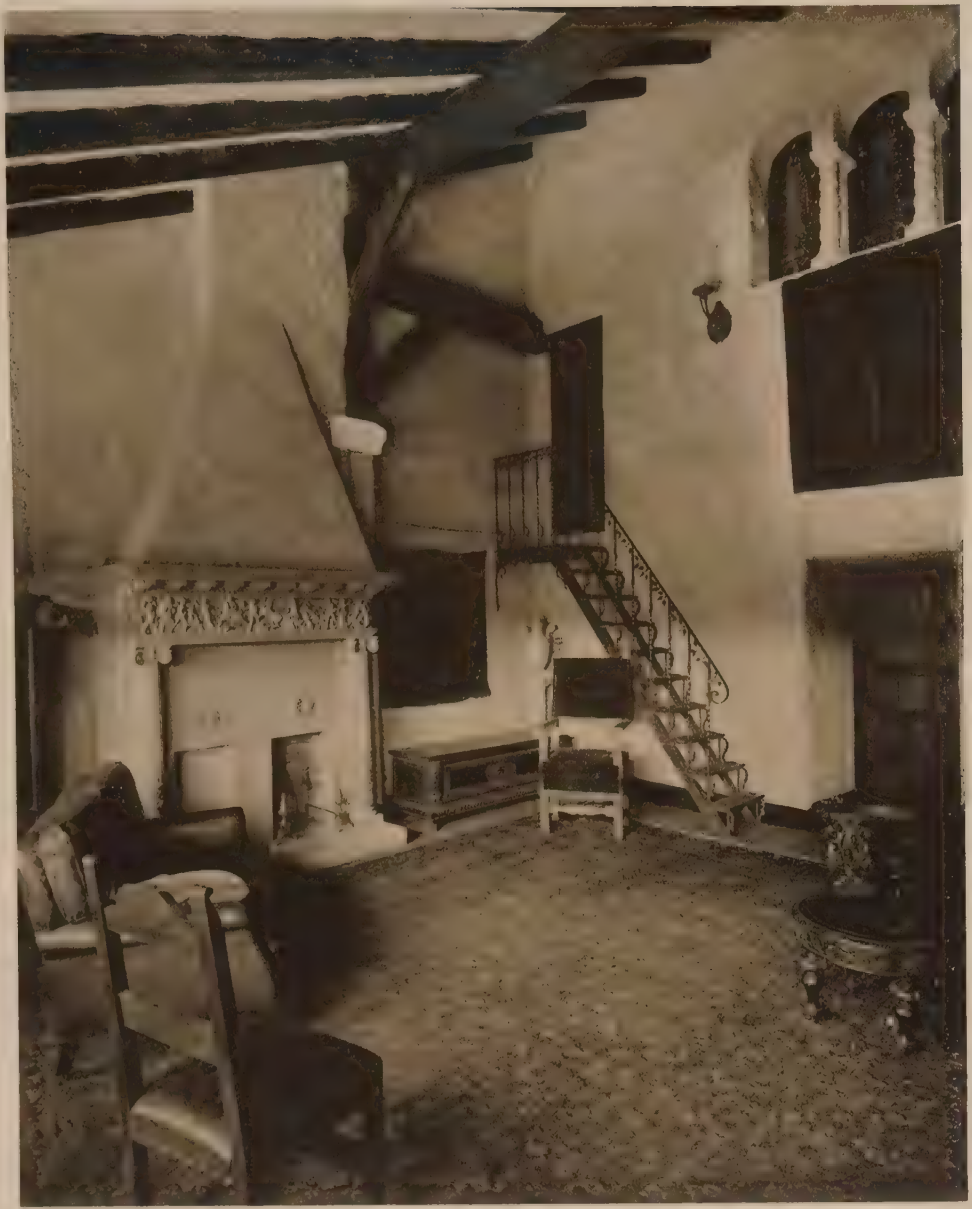
We are unable to fix a date for the old building, but the slate roof, covered over by successive metal roofings, was held in place by hand-wrought nails, and the old rafters are single pieces forty feet long. The foundation is on a cribbing of logs covered over by two layers of three-inch white pine plank caulked as a wooden ship is caulked.

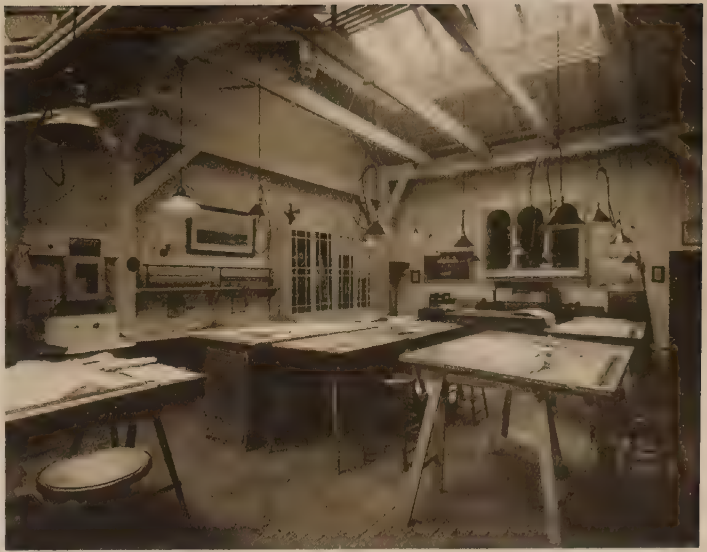
In New York City light is a rare element, and by altering the old building to our uses we have acquired it in abundance. Besides, evading the pursuing landlord quite satisfactorily and having an arrangement of office space suited to our own manner of doing business.



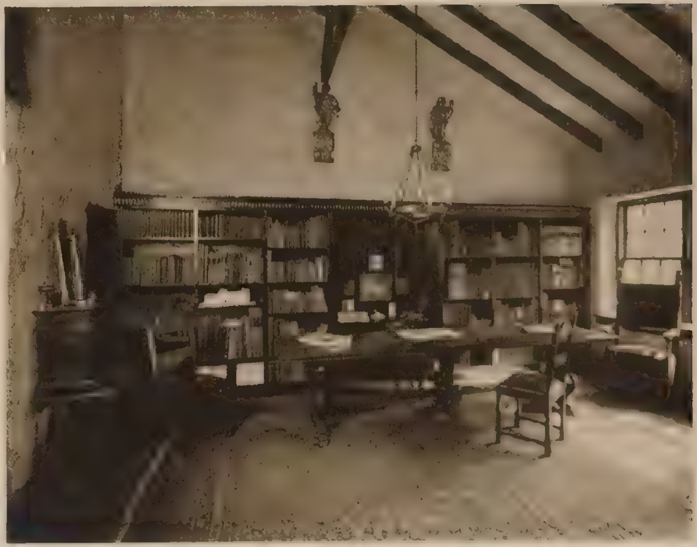
PLANS OF OFFICES OF CLINTON MACKENZIE, 119 BROAD STREET, NEW YORK.

Clinton Mackenzie, Architect.





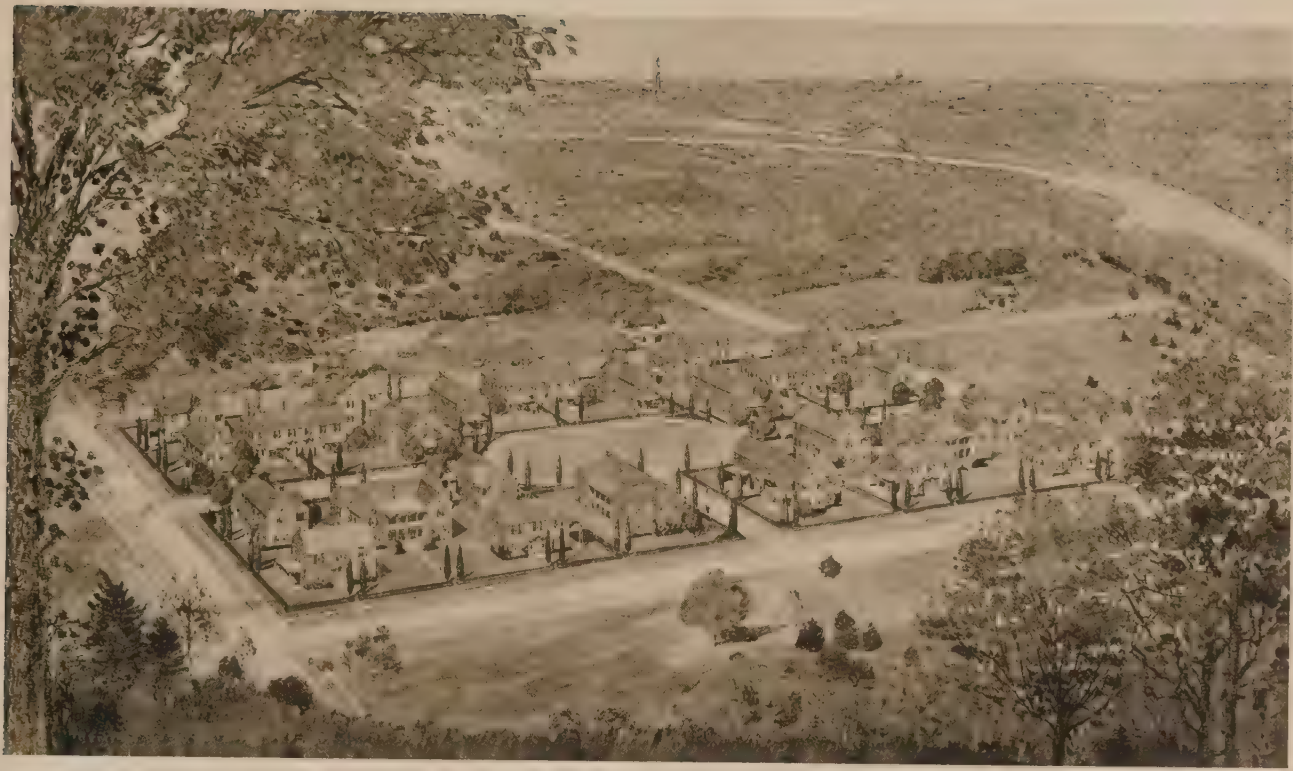
DRAFTING ROOM.

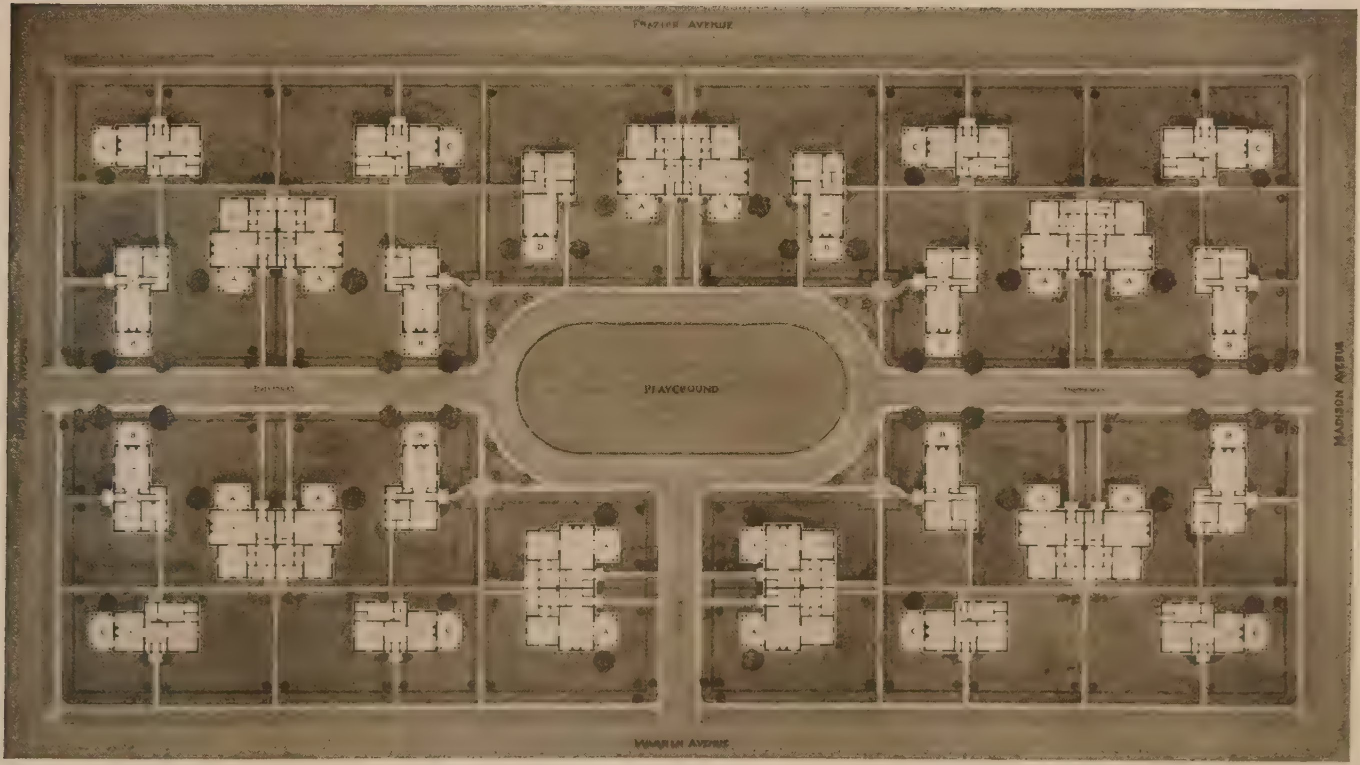


LIBRARY.

Clinton Mackenzie, Architect.

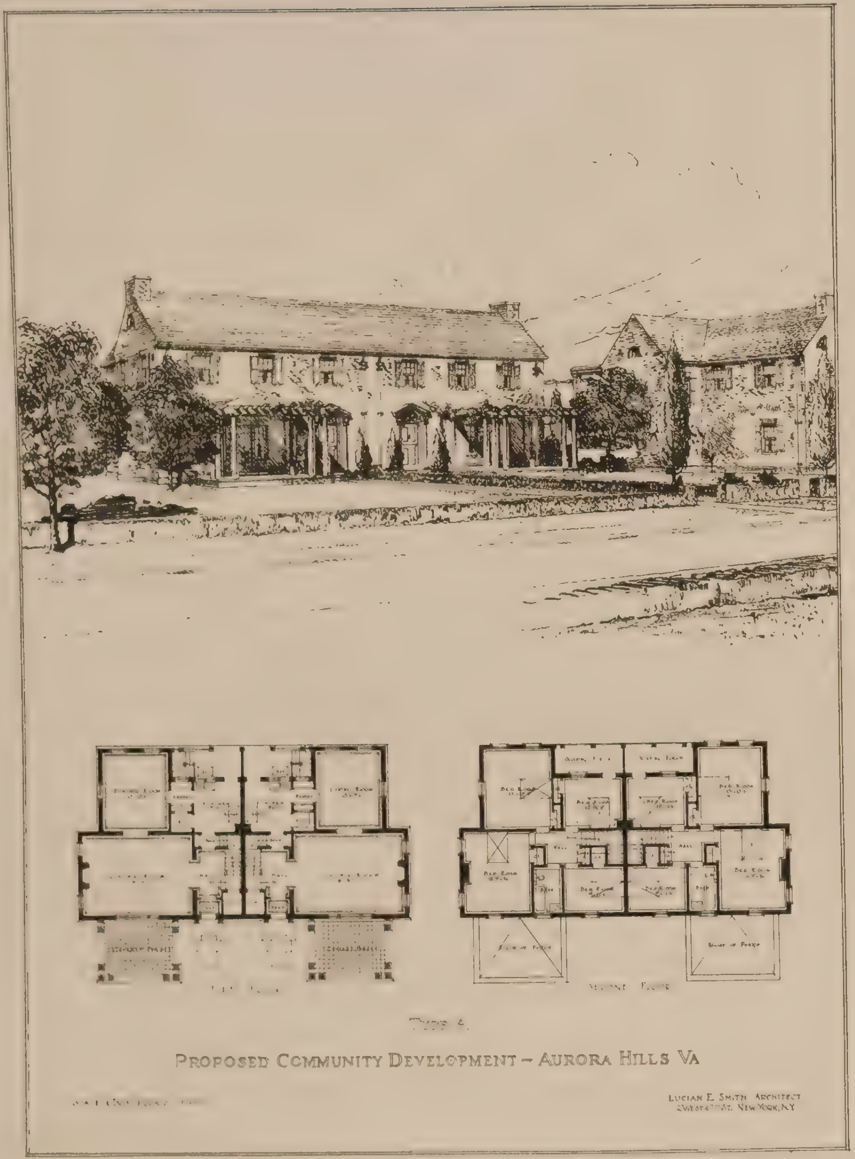
LIBRARY, OFFICES OF CLINTON MACKENZIE (ARCHITECT) 119 BROAD STREET, NEW YORK.



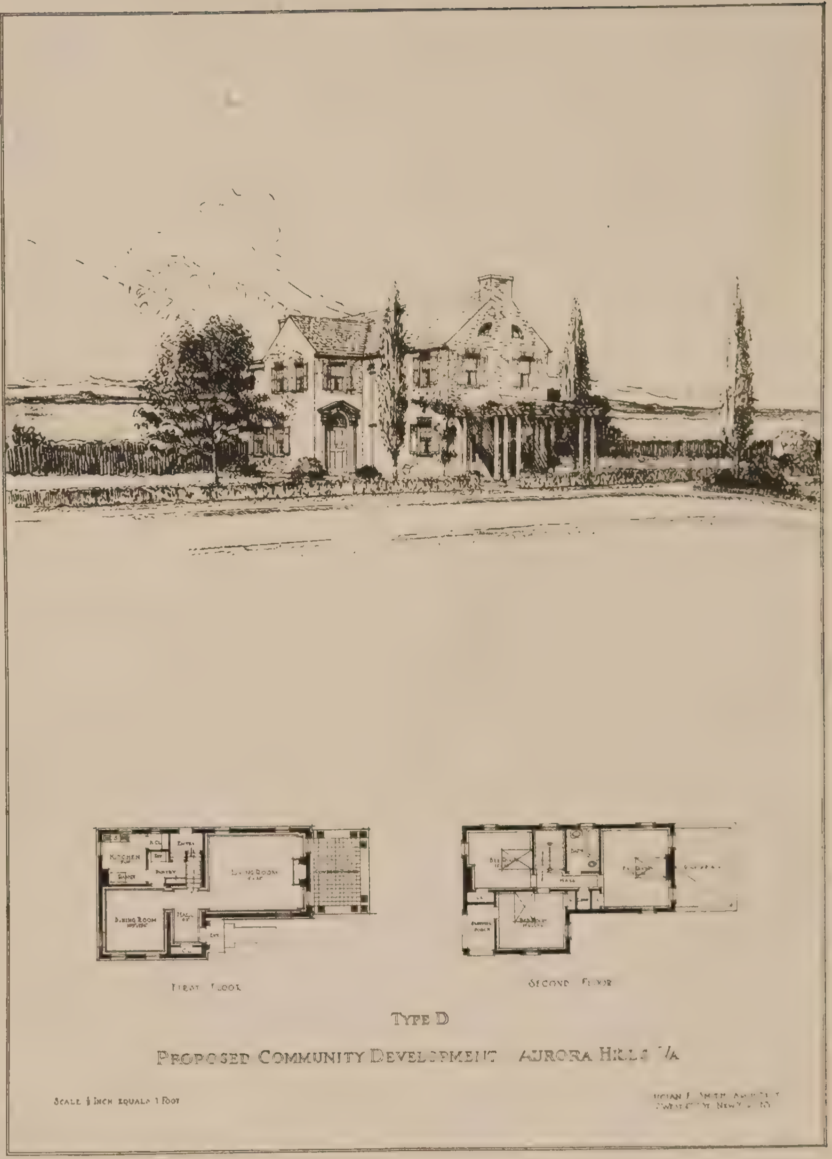


PROPOSED COMMUNITY DEVELOPMENT, AURORA HILLS, VA.

Lucian E. Smith, Architect.



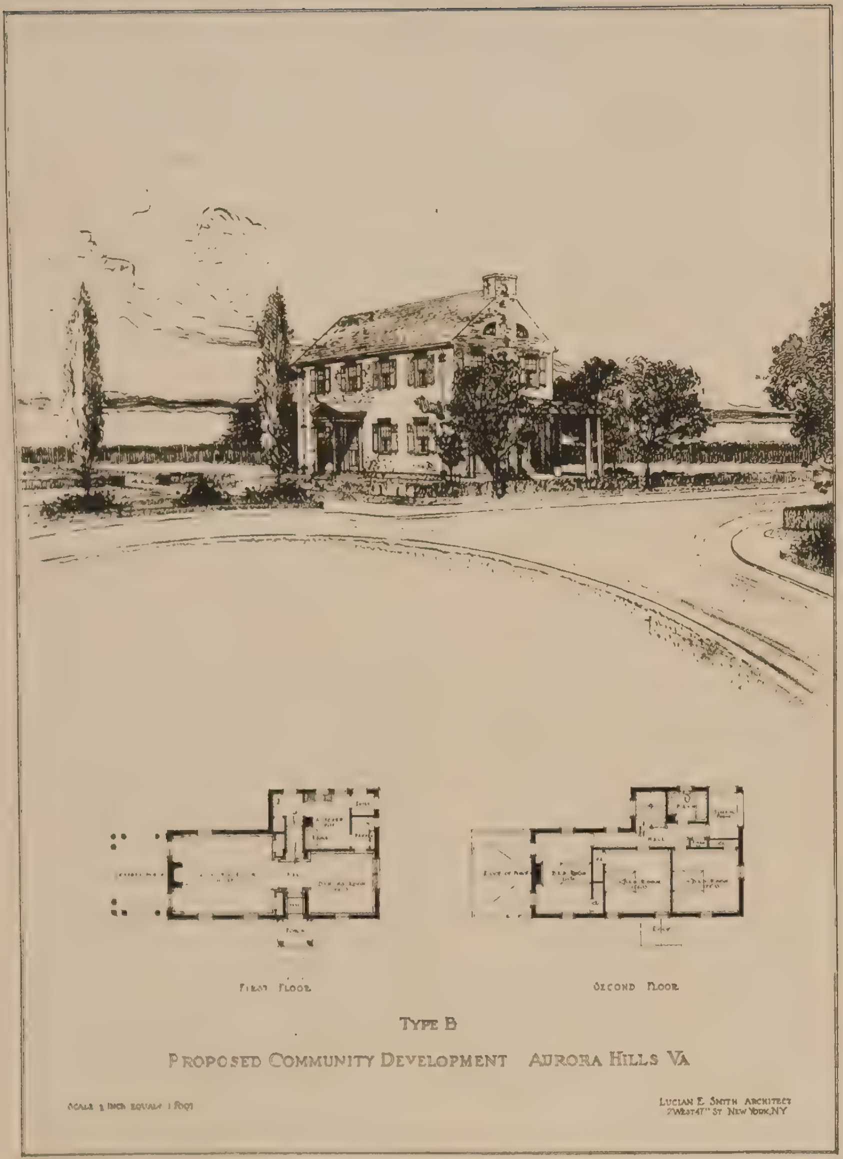
First Floor
Second Floor
Type A
Proposed Community Development – Aurora Hills Va
Lucian E. Smith Architect
2 West 47th St. New York, N.Y.

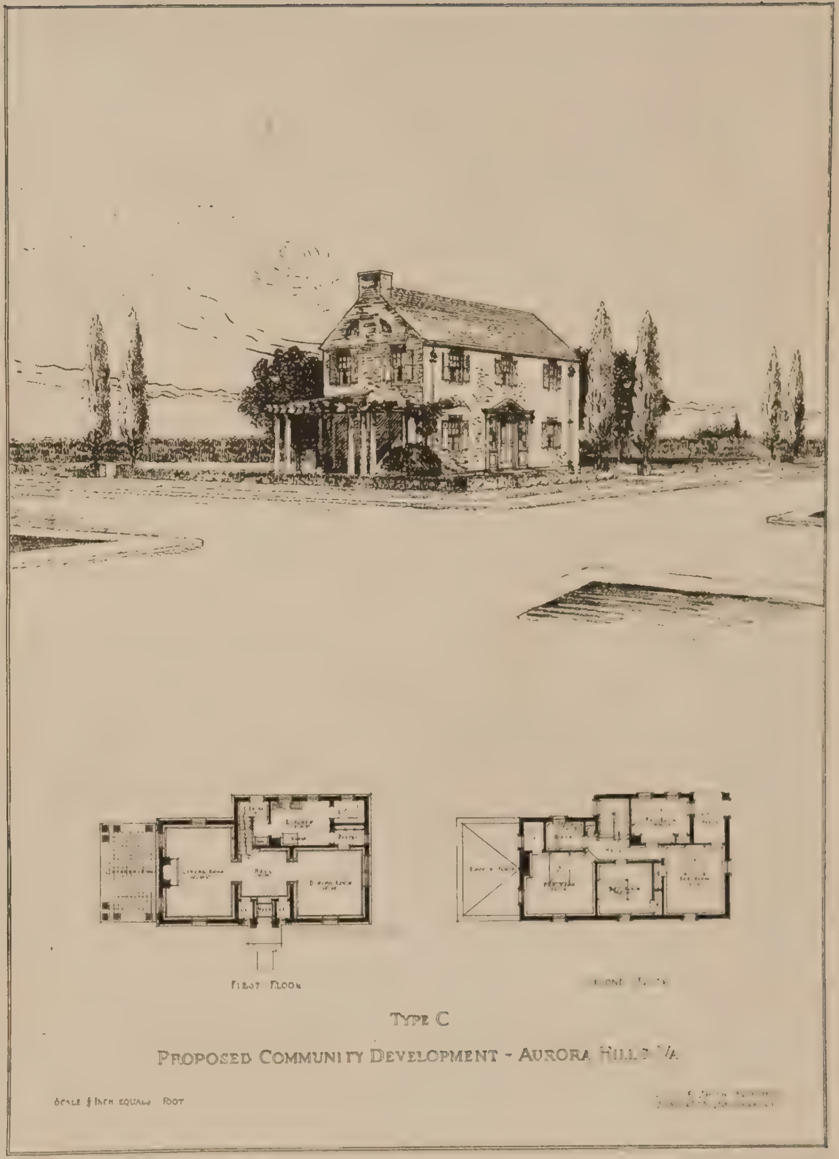


Kitchen
Pantry
Living Room
Dining Room
Hall
First Floor
Second Floor
Type D
Proposed Community Development Aurora Hills Va
Scale ⅛ Inch equals 1 Foot
Lucian E. Smith Architect
2 West 47th St. New York, N.Y.

PROPOSED COMMUNITY DEVELOPMENT, AURORA HILLS, VA.

Lucian E. Smith, Architect.


FIRST FLOOR
SECOND FLOOR
TYPE B
PROPOSED COMMUNITY DEVELOPMENT AURORA HILLS VA
SCALE ⅛ INCH EQUALS 1 FOOT
LUCIAN E. SMITH ARCHITECT
7 WEST 47TH ST NEW YORK, NY


FIRST FLOOR
SECOND FLOOR
TYPE C
PROPOSED COMMUNITY DEVELOPMENT - AURORA HILLS VA
SCALE ⅛ INCH EQUALS 1 FOOT

PROPOSED COMMUNITY DEVELOPMENT, AURORA HILLS, VA.

Lucian E. Smith, Architect.

A Community Development in Virginia

Lucian E. Smith, Architect

THE history of housing communities shows many projects for bettering conditions of the laboring classes and of the poor, both in large cities and in the country, but few attempts have been made to provide the man of moderate means with better-designed and better-built houses of relatively small cost.

The speculative builder and the owner with land to exploit seem slow in realizing that it is really bad business to sell to the uninitiated home-buyer houses which are with but few exceptions unattractive, badly planned, and so cheaply built that repairs are constantly required to keep the property not only from deteriorating but even to keep it habitable for men and women who have a right, by reason of their breeding and education, to houses which are attractively designed, conveniently planned, warm in winter, complete in their sanitary arrangements, and which do not require a constant expenditure of money to make good defects of careless and cheap construction.

This project has been conceived and developed with the basic idea of providing homes for people of refinement who appreciate a properly designed and well-built house. The prime requisite for such houses is reasonable cost.

A block 600 feet by 300 feet has been laid out to provide for 32 building lots, ranging from 50 feet by 88 feet to 50 feet by 100 feet. Eighteen per cent of the plottage has been reserved for driveways of communication and a large playground for children. The grounds have been laid out with hedges, trees, and shrubs to produce an attractive ensemble. Service walks have been put in to facilitate delivery of supplies and to keep such service from the fronts of the houses.

The houses themselves have been arranged around a large central court, containing the playground and two other courts to the east and west. A certain percentage of the houses face these courts, and the remainder face the streets surrounding the block.

Advantage has been taken of the principle of setting forward or back alternate houses in order to give the owners the benefit of wide open spaces between the houses. Sufficient variety has been introduced into the design to avoid monotony in appearance, and yet the same type of architecture prevails throughout in order to give harmony to the whole. The style of architecture adopted is Virginia Colonial as most fitting to the locality. The exteriors are of brick carefully laid up. The porches, entrance doorways, window-frames, and sash are painted white, with the shutters green. The slate roofs make for permanence and economy.

The plans of the houses are sufficiently varied to meet the requirements of families of different sizes and tastes. Four types are employed. Type A is a two-family house, each with four bedrooms; type B is a detached house with three bedrooms; type C is the largest detached house with four bedrooms; and type D is the smallest detached house with three bedrooms.

Ample provision is made in basements for the storage of coal and provisions. Separate water-closets and laundry-trays of substantial make with wood-slat platforms are provided. Entrance directly to the basements from out-of-doors permits of wet clothes being taken to the drying-yard without going through the kitchen.

The first floors have exceptionally large living-rooms, large dining-rooms, coat-rooms, butler's pantries, kitchens, and storage closets.

Ample space is given for refrigerators on rear porches, preventing the tracking up of the kitchens by the delivery of ice.

The second floors in addition to the bedrooms above noted, each of which is provided with ample closet space, comprise cedar-lined linen-closets, bathrooms, and sleeping-porches. The attic space is readily accessible for storage purposes.

The materials of construction and workmanship are of the best, and are of a similar character to houses of much higher price. The soil is clay, which necessitates the especial care which has been taken to provide for dry cellars. The walls and floors of the cellars are waterproofed, rendering the walls and floors dry for all time. The ceiling of the cellar is plastered to keep the house warm in winter, a precaution not met with in the usual house on the market for sale. The footings are of concrete, and the foundation walls are built of the best hard-burned brick laid up in cement mortar instead of lime.

All supporting columns and girders are of steel, properly protected by painting and amply figured to carry the load of the superstructure without cracking the plaster or causing doors to stick. All chimneys are lined with terra-cotta flue lining laid up in cement mortar.

The sidewalks and steps are substantially built of concrete and properly graded to carry off water.

The structural timber is of sound No. 1 Virginia pine and substantially put together to avoid undue shrinkage and settlement.

First floors are double to insure warmth, and the finished floors are laid over heavy building-paper. All exterior trim is of No. 1 clean, sound Florida Gulf cypress. The porch columns are patent lock-joint columns to insure against the wood opening up through shrinkage. Porches are of generous size. The sleeping-porches are canvas-covered and painted.

Especial care has been taken with the interior finish, woodwork, and doors. No stock trim is used.

The mantels are especially designed with brick or tile facings. The stairs are made unusual features of the house, all being especially designed, not of the usual stock patterns.

The first-story floors are of white oak properly finished with wax, which is easily kept in order by rubbing with a cloth and a little prepared wax from time to time. The second-story floors are of edge grain hard pine well driven up, smoothed and varnished.

The plastering of the houses is a high-grade patent wall plaster. Ceilings of first-floor rooms, excepting kitchens, are sand-finished, which gives a most artistic effect when treated with water-color. Metal corner beads are used for all exterior corners to prevent damage to the plaster.

Attention is called to the treatment of the bathrooms. The plumbing is of the best character with modern pedestal lavatories, which allow of cleaning on four sides, built-in tubs of latest design, and low-down porcelain tank water-closets. The floors are of ceramic mosaic tile with wainscot of the same material; the walls above and ceilings are finished in the highest grade of elastic enamel. Each bath-room is provided with medicine-closet with plate-glass mirror. All fixtures except closets are provided with hot and cold water.

A forty-gallon galvanized-iron range boiler is provided in each kitchen to assure an ample supply of hot water. Each house is provided with a non-freezing brass sill cock for hose connection. Laundry-trays are of porcelain enamel, white and clean-looking, in place of the usual soapstone or albertine.

The kitchen sink is also pure white porcelain enamel, with back cast on the sink itself to prevent the collection of grease and dirt.

The heating system is hot water, carefully calculated for each house to give the maximum efficiency. The "Honeywell" system is included in each installation, which allows of high temperature in extreme weather with the minimum of fuel consumption. The radiators are of the simplest design to avoid collection of dust and dirt. They are painted to match woodwork of rooms.

The houses are wired in flexible armored conduit, which gives a maximum protection against fire. Electric bells are provided with buzzers from dining-rooms to kitchens. Base receptacles have been put in living-rooms for reading-lamps. The lighting fixtures embody the most up-to-date ideas in interior lighting and finish. Especial attention is called to the indirect dining-room fixtures used in place of the old-fashioned dome lights.

A novel feature of the bedroom-lighting is the dresser lights, with wire frames provided, so that any color shade made may be used to correspond with the color scheme of the room.

Pilot switches are also used so that upper and lower hall lights may be turned on or off from either up or down stairs.

In brief, these reasonable-sized houses are thoroughly well built and finished and provided with many up-to-date conveniences only met with in houses of a higher cost. Not a dollar has been wasted on superfluous decoration to the sacrifice of good and lasting construction.

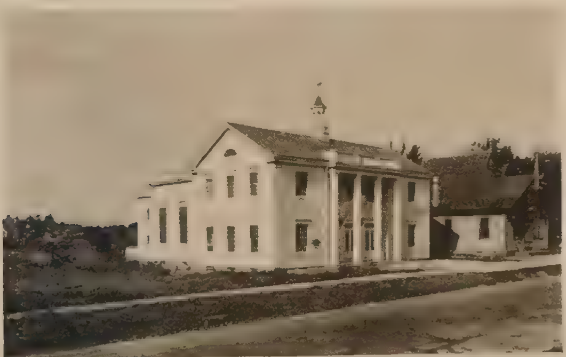
Homes of this size and cost are usually "built to sell." These houses are built to be owned and enjoyed by men and their families who appreciate homes in good taste, and which they can be confident are honestly built.

Furthermore, an owner of one of these houses has the assurance that he is protected for all time by wise building restrictions, formulated for the common good; that his neighbors are people of his own class, and that his children are growing up amid artistic and attractive surroundings which will have a lasting effect for good upon their characters.

The Memorial Town Hall at Old Lyme, Conn.

Payne, Griswold & Keefe, Architects

THE project was first talked of a few months after the signing of the armistice, when the people were anxious to do something for those who had given their services in the World War. The natural thought was to erect some sort of a building as a memorial, and the need of a public building in the town, coupled with the thought of doing something to perpetuate the deeds of those who were in the service, gave birth to the idea of a Memorial Town Hall.

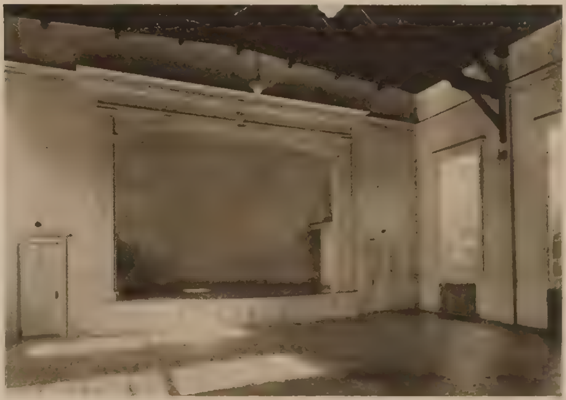


The memorial town hall, Lyme, Conn.

Early in 1919 a general meeting of the townsfolk was held, and the Old Lyme Memorial Town Hall Committee was appointed. From this committee the Finance Committee, Building Committee, and Entertainment Committee were formed.

The Finance Committee set about devising ways and means to raise funds. The town promised to contribute $10,000 of public money if the committee raised $15,000. The latter sum was speedily raised by public subscription. Two street fairs, held in 1920 and 1921, netted a total of $5,500. The total amount of funds required was raised prior to the completion of the building, the total cost being slightly over $38,000, or approximately 31.4 cents per cubic foot. The Artists Association of Old Lyme entered into the project enthusiastically, at the beginning promising that they would finance 50 per cent of the cost of the building providing they could have exclusive use of the building one month each year for their annual exhibit. Later they withdrew their promise as considerable criticism from several sources regarding the giving of the exclusive use of the building to any one was caused.

The Building Committee invited several firms of architects to submit examples of their work, and after several meetings selected the firm of Payne, Griswold & Keefe to prepare the drawings and specifications. This firm of architects is composed of three ex-service men who have become associated since the World War.

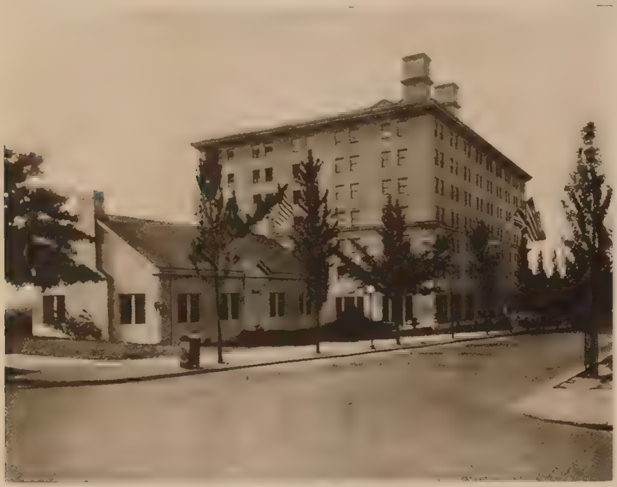


The auditorium.

The Grace Dodge Hotel, Washington, D. C.

Duncan Candler, Architect

BEFORE the signing of the armistice plans had been made for a building of a different character, which was intended as supplementary to the government housing for women, in the immediate vicinity. This was to be a long, low, reinforced-concrete structure, six stories high, and application had been made to Mr. Baruch, chairman of the War Industries Board, for the required materials. Ultimately this building was to be used for permanent housing accommodations.


The hotel and tea house.

With the armistice came changed conditions and requirements which necessitated the development of a new design, and permitted the use of materials hitherto prohibited.

It was decided to make the building a high-class hotel for women, the location lending itself admirably to the scheme. It was to be planned so that it would insure a proper return on the investment, which it is calculated to do, and not be institutional either in character or management.

In order that the building should pay its way, provision had to be made for at least 400 persons, so it was planned with 343 single rooms and 28 double rooms to house temporary and permanent guests, with comfort and convenience at reasonable rates. Various units were adopted on the bedroom floors: bedrooms with public baths and toilets, bedrooms with connecting shower-baths and toilets, and bedrooms with private baths.

After the estimates were received and at the time of the signing of the contract a certain amount of money was available. By the co-operation of the committee, architect, and builder, and by the substitution of certain materials during the construction, the desired result has been obtained together with additional features, without exceeding the available amount by more than 6½ per cent, of which 3 per cent was due to unforeseen foundation conditions. The building was built during the peak of prices and finished at the present time, with only a slight reduction in materials, but not in labor. Therefore, all the parties concerned are pleased with the way the cost has been handled.

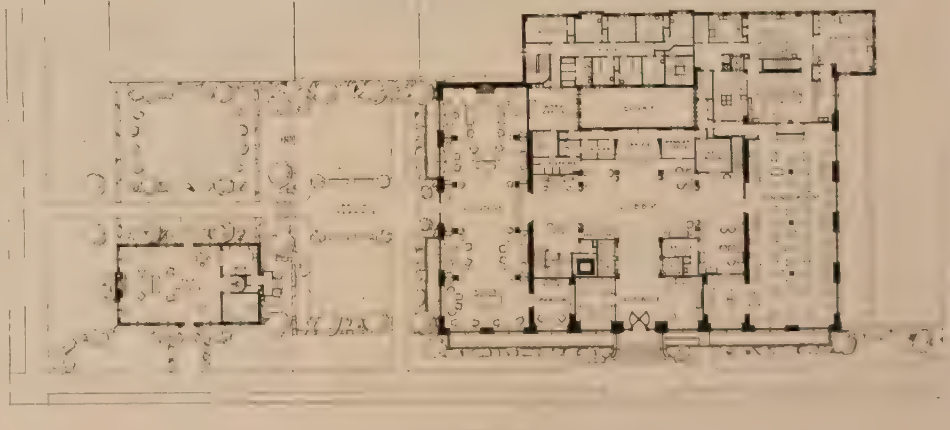
The building was designed to give a strong simple effect, with practically all decoration eliminated. The mass was based on Italian lines for simplicity and broadness. For the last two or three years, and at the present time, the cost of building has been so great that such a restricted policy has been advisable to keep work within the limits of good investment and conservative effect. It was desirable to get the best possible effect with simple materials.

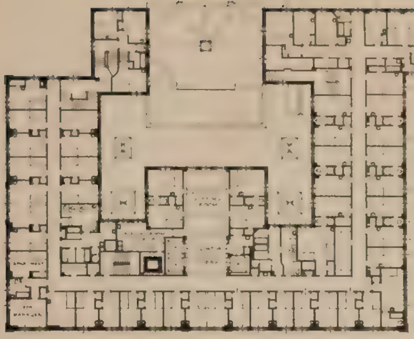
An extra story may be added at any time as the foundations and structural supports have been built for such a possibility. The building would then not exceed, in height, the limit allowed for buildings in the vicinity of the Union Station. The ventilating devices, elevator, pent-house, and water-tanks, located above the roof, are hidden and incorporated in the design.

After the signing of the armistice steel became available and other materials on which the restrictions had been very severe. The building was built of structural steel on grillage foundations, with interlocking tile exterior walls faced with buff brick and trimmed with cut cast stone, to harmonize with the brick. There are reinforced concrete floor arches and cement floors throughout, except on main floor, where lobby and dining-room are of terrazzo, laid in designs of different colors, and the lounge, where the floor is of oak.

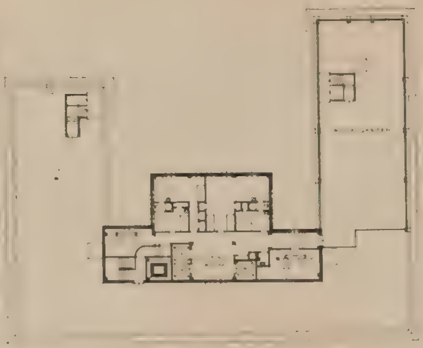
The main and garden entrances are filled with ornamental iron of Renaissance design. A large plaque over the main entrance is of cut cast stone, interrupting the band course, above which are placed three large flagpoles. Over the garden entrance there is another large flagpole.

The service entrance for supplies, trunk and help's entrance is placed at the rear, from an alley, and gives into a generous centrally placed freight lobby, as shown on plan. Control of the incoming supplies is provided. No bedrooms for servants are provided in the building, as it is customary

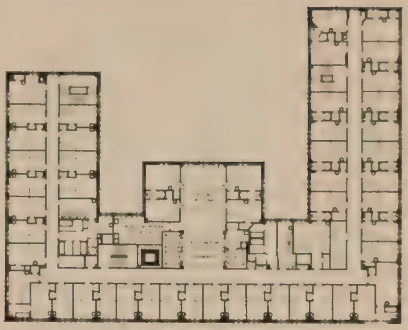

MAIN FLOOR PLAN



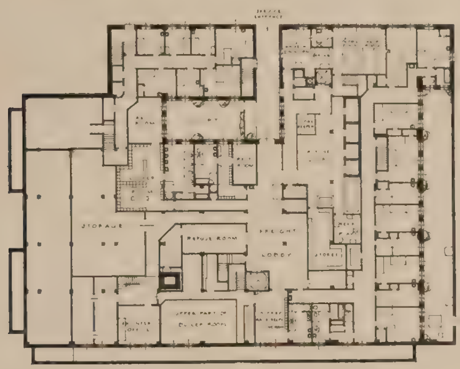
SECOND FLOOR PLAN



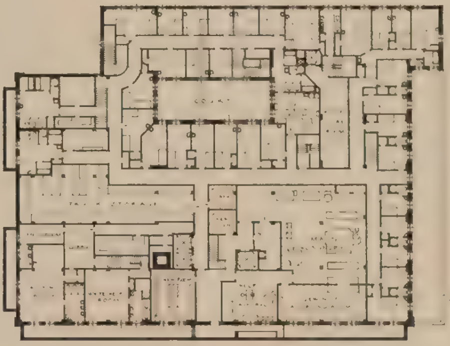
ROOF PLAN



TYPICAL FLOOR PLAN



GROUND FLOOR PLAN

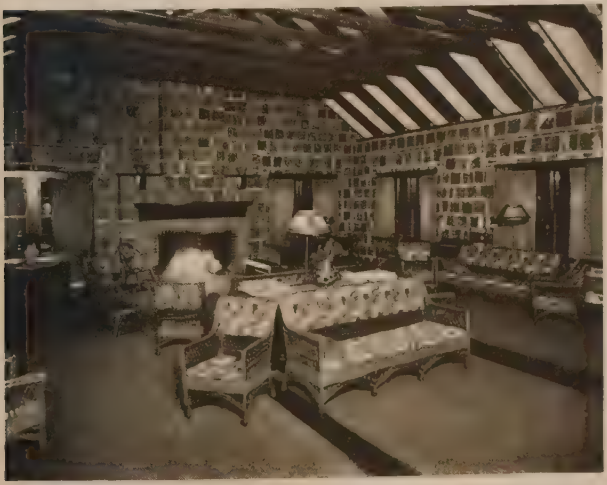


FIRST FLOOR PLAN

in Washington for the help to live in their own homes. On each floor there is a service lobby, in connection with the service elevator, with sink, etc.

The hotel has a beauty parlor, shoe-shining parlor, etc., and a ladies' apparel shop, and house laundry, and help's laundry. Locker rooms, toilets, and rest-rooms for black and white female help; locker and toilet rooms for black and white male help; and dining-rooms for the white and black help are provided. In connection with the working force there is a main office, working office, and checking room, also staff bedrooms.

Generous allotment of space is made on the main floor for social activities. Dining-room for guests and for the outside public to seat 250 persons, also private dining-room, a kitchen and its dependencies, refrigerating system, and ventilating system are provided.



Interior of tea house.

On the bedroom floors, the single rooms are about 8 by 14, and the double rooms are of ample size for individual furnishings. For guests there is a good range of prices. Single rooms are from $1.50 per day to $4.00 with private bath, and the double rooms $3.50 to $5.00 per day. On each floor there is a sitting room, centrally and pleasantly situated, also valeting room, where either self-service or paid service may be had.

Decorative treatment is restricted—the main floor receiving the only embellishment. The lounge of this floor has rough plaster walls, fluted piers, a rough, ornamental plaster ceiling, oak floor and wainscoting to chair height. The vestibule and lobby have beamed ceilings of rough plaster, terrazzo floors designed in colors, oak wainscoting 7 feet 6 inches high, and double folding glass doors between lobby and lounge. The dining-room walls and ceiling are rough plaster, with ornamental moulding at ceiling, the floor is of terrazzo and mirrored doors open into the lobby.

With the opening of the Grace Dodge Hotel, for the first time the name of the Young Women's Christian Association is associated with a high-class hostelry equipment and twenty-four-hour daily hotel service, built and maintained for the use of women of leisure as well as the self-supporting woman, without restriction or rule. The Grace Dodge is the first contribution made by the Association to women of this type. Hitherto its efforts have been confined to boarding homes for girls and women of limited resources and wages, for whom it yearly maintains 8,000 beds, and housed 50,086 girls last year in New York City alone.

"Every effort has been made to make the hotel comfortable and pleasant, and yet inexpensive," said Mrs. John D. Rockefeller, Jr., Chairman of the Housing Committee, under whose personal direction the hotel has been built. "All the rooms are absolutely outside rooms with sunlight. The interior decorations and furnishings of the entire building are by Helen Criss.

Announcements

Making a Staple out of an Intricate Specialty.—This has been accomplished by the manufacturers of the magnesite stucco. It has been brought about by the discovery of a method of making a dry mixture of the magnesite cement and the chloride of magnesia, a combination which all familiar with the use of magnesite know is necessary in order to make magnesite suitable for floors or stucco.

The reason heretofore for not having these materials mixed together and shipped dry is that it has been considered a chemical impossibility, on account of the inclination of chloride, even though dried to the fullest extent to start with, to gradually take the moisture from the air and liquefy, resulting in turning the mixture into stone.

By continued experiments and perseverance, and the assistance of several of the best chemists in the country, the desired result has been brought about and the concern manufacturing this new material is now fully equipped and is actually shipping the product dry with nothing to be added at the building but water.

Among the many advantages of magnesite cement shipped in this manner are the greatest saving in freight, the simplifying of storage and application, and the avoidance of errors in the mixing and application of the material.

Nairn Official Sails on the "Aquitania."—Mr. Peter Campbell, treasurer and general manager of the Nairn Linoleum Company, Kearny, N. J., largest manufacturers of linoleum in the world, sailed on Tuesday, October 4, on the *S.S. Aquitania*. The trip is a business one, and will include visits to England and Scotland.

Leeds & Lippincott Company announce the signing of a contract with the George A. Fuller Company, of New York, for the building of an addition to Haddon Hall, Atlantic City, from plans prepared by Rankin, Kellogg & Crane, architects, of Philadelphia, Pa.

The new boardwalk wing will be directly back of the stores, arcade, and pavilions which were built last year. The height will be twelve stories and the frontage toward the boardwalk one hundred and fifty feet and on North Carolina Avenue sixty-two feet. It will be of fireproof construction of steel and brick with terra-cotta trimmings and a granite base course. The first three stories will be faced with Indiana limestone.

The new structure will contain 147 bedrooms and 147 baths—most of them with direct view of the ocean—and public space, parlors, and exchanges. With this addition the capacity of Chalfonte-Haddon Hall will be about 1,200 persons.

Work commenced in October, 1921, and will be completed in time for the summer season of 1922.

The United States Gypsum Co.'s Syanized Plaster.—Up to a year ago but little advance had been made in the manufacture of gypsum wall-plaster since four thousand years ago when the Egyptians first used this material in their temples and pyramids. Other building materials have been improved for convenience, practicability, or durability, but gypsum plaster remained fundamentally the same as when originated by the ancients.

After twelve months of complete test, however, the United States Gypsum Company announces that the merits claimed for a new process of plaster manufacture have been proved completely. Great importance is attached to the success of this method by officials of the company, who point out that the new plaster overcomes difficulties that have been encountered by workmen and builders for thousands of years. Increased efficiency of plaster-workers is a natural result, combined with an economy that has gratified users everywhere.

The plaster made by the new process is known as Syanized Plaster. This process consists of sealing each minute particle of gypsum against atmospheric moisture. The plaster loses none of its sand-carrying capacity, even when stored for many months. It does not go "dead" while in storage, and being always "fresh," assures full coverage. Other economies of this plaster are the rapidity with which it takes the water in mixing and its unusual plasticity under the trowel.

The manufacturers of Syanized Plaster report that the product has been standardized throughout the country at the various United States Gypsum Company plants.

Gillis & Geoghegan, 540 West Broadway, New York, have just issued a new 20-page, 8½ x 11-inch, two-color catalogue. It is fully illustrated with photographs of actual installations of G & G Telescopic Hoists, as used for handling ash-cans, barrels, trays, and other loads. It also contains two forms of specification, for each model, one a very short form and another which describes the various parts of a complete telescopic hoist installation.

Any one interested may obtain a copy by writing to the above firm.

Mr. Frank E. Fowler, formerly of the firm of Fowler, Capelle & Troutman, architects, Evansville, Ind., is directing architectural work for the Consolidated Realty and Theatres Corporation, 332 South Michigan Boulevard, Chicago. Samples and catalogues requested.

Mr. Edwin S. Coy and Mr. Ralph M. Rice are pleased to announce their partnership for the general practice of architecture, under the name of Coy & Rice, at 297 Madison Avenue, New York.

Mr. Moise H. Goldstein wishes to inform his friends that after October 1 he and his associates, Mr. Thomas M. Harllee, Mr. Nathaniel Cortlandt Curtis, Mr. Frederick D. Parham, and Mr. Nelvil C. Settoon, will be in the new Hibernia Building, Suite 1105–1108, New Orleans.

John J. Klaber, architect, announces the removal of his office to No. 103 Park Avenue, New York City.

Theo. L. Perrier, architect, New Orleans, La., advises us that he has moved his office to 305 Marine Bank Building.

F. Rosenheim, architect, F. A. I. A., announces the removal of his offices to Suite 402, Pacific Mutual Building, Los Angeles.

The A. P. Swoyer Co. merchandise stock, at 17 North 7th Street, Philadelphia, has been purchased by and the premises formerly occupied by Swoyer leased to U. T.

(*Continued on page* 351)

Dynamic Symmetry and Modern Architecture

By Jay Hambidge

THE great weakness of architecture to-day lies in the fact that it does not disclose concrete proportion of the right type. We might say that architecture to-day is almost without proportion, indeed it could hardly be otherwise. The prevailing practice of putting together unrelated design elements as they are lifted or adapted from the sources of the past has resulted in a hodgepodge. When we compare our design with that of the past we find it weak where the old work was strong. The most characteristic element of the design of the past is the bonding or knitting together of composing units. This is due to the use of proportion. A better word would be symmetry.

Very few architects or designers to-day know that the base of design is a certain element of formality which depends upon symmetry. As a matter of fact design cannot exist without symmetry. As soon as we put intention into our work we introduce symmetry of some sort.

We must turn to the Greek for the correct meaning of symmetry. To the classic designer it meant simply the relation of the part to the whole. The relation of a man's hand length to this stature would be an example of symmetry. The height of a column compared to the height or width of an abacus, or column and entablature relationship, or both of these to the building as a whole, would be spoken of by the Greek as symmetry.

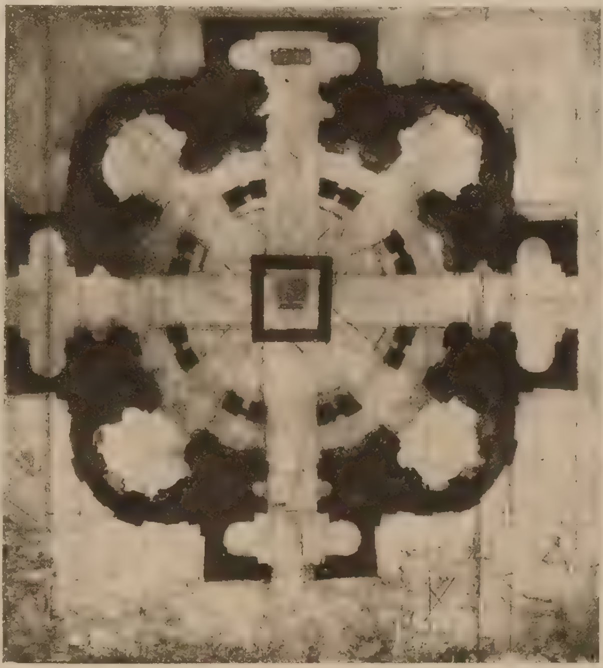


Figure 1.

But there is something more to symmetry than interrelationship of parts. There is the design conception as a whole. This is the dominating symmetry factor. When this is fixed everything else depends upon it. The design history of the past shows us that artists have fixed this dominating symmetry in at least two ways: one by the use of the regular figures of geometry such as the square and the equilateral triangle or by lengths of line determined by some measuring unit, the other by employing areas possessing peculiar properties of measurableness.

An example of the first method is furnished by an architectural ground plan by Michelangelo. I found this plan, with a number of others of like character, in the Casa Buonarotti at Florence last summer. See Figure 1. To my knowledge these plans have never been published.

The importance of this design to the modern architect and artist lies in the fact that it is an excellent illustration of the conscious use of symmetry by an admittedly great designer. It will be noticed that certain parts of this plan are heavily inked while other parts are defined by simple lines which evidently were not to appear when the design was completed. These lines represent symmetry construction. The basis of the theme is a square divided into eight sections. The intersections of the ruled lines furnish points which were utilized by Michelangelo to fix or correlate the elements of his creation. These lines and the general method of their use show us beyond question that the artist had in mind the creation of a plan the details of which would be united and bound together in much the same way as are the composing elements of a crystal. In other words, Michelangelo had in mind the production of a plan which would be an entity or of such interdependence of part and whole that the result would have definite character.

In this connection it would be well for us to remember that design character is dependable upon definite correlation. A design may possess two kinds of character, that of the creating artist and that of the design itself. Without the latter design does not exist.

If necessary we could reduce Michelangelo's building plan to arithmetical terms and thereby explain in detail the actual relationship of each part to every other part and to the whole. In this type of symmetry, however, this is not necessary. It is sufficiently clear as it stands.

Michelangelo has used in this plan a type of symmetry which is characteristic of that which was employed throughout the Middle Ages. This type of symmetry has been given the name "static" and, in nature, is best exemplified by the crystal.

As has been said, symmetry must be present before design can exist. If this be true then there must be times when design and its consequent symmetry is created without the artist being aware that the symmetry is there. This frequently happens, but such symmetry is always of a very low grade. We find it in the work of savages and in the design produced during decadent or formative periods. Symmetry to the savage probably represents the intuitive application of rhythm of much the same kind found in his dances and songs. While the savage and the decadent, or immature designers, work and have worked without a conscious use of symmetry, there is abundant evidence that the artists of more sophisticated epochs had a more or less complete knowledge of its principles. We know this is true because books upon the subject have survived. But we could establish the point from the design products themselves.

When the effort was made to fix the types of symmetry found in design it was discovered that it was necessary to look into the matter of natural symmetry first. Here it was seen that there were two distinct types, one of which is exemplified by the crystal or regular natural pattern forms, and the other by the plant or the shell. The crystal type was called static, as previously stated, and the plant and shell kind were given the name "dynamic." When the design efforts of man were reduced to the symmetry basis it was seen that there was a parallel between the natural and the human product, that is, man as well as nature used either static or dynamic symmetry.

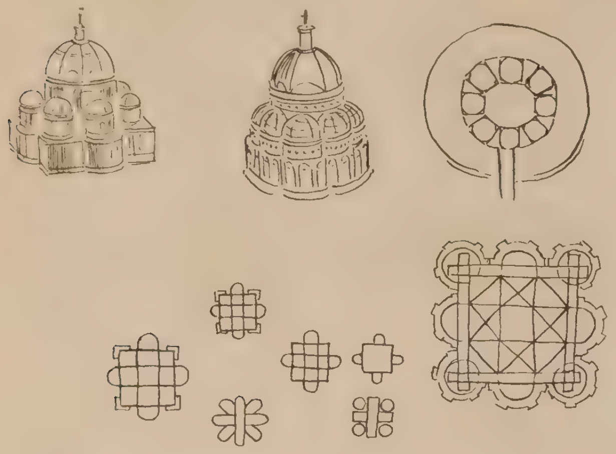


Figure 2.

The static is the symmetry which is used intentionally or unintentionally. The symmetry used in Gothic, Byzantine, Saracenic, Moorish Mohammedan, Indian, Persian, Assyrian, Chinese, and Japanese design is intentional or conscious and static. That employed by the savage or the immature or decadent designer is unconscious or unintentional, and is always static.

Dynamic symmetry cannot be used unconsciously. It is the symmetry of Greek design during the great classic period.

A page from a note-book of Leonardo da Vinci, Figure 2, exhibits that great artist's conception of symmetry. On this page we have free-hand renderings of architectural ground plans and elevations. Like that employed by Michelangelo, this symmetry is static.

One of the leading Gothic architects of France was Villard de Honnecourt, who lived during the thirteenth century. He was the supposed architect of the Cathedral at Cambray, destroyed during the French Revolution. Villard once received a commission to build a cathedral in far Hungary and, while journeying to that country, made notes on the interesting examples of architecture which he saw. Fortunately his observations have survived in his note-books. It is particularly interesting that he made a sketch of the Cathedral at Laon, which he said was one of the handsomest buildings he had ever seen. We look in vain however in this sketch for a realistic representation of the cathedral such as a modern architect would make. The Gothic master simply made a rendering of the symmetry theme of the building, and, as later did Leonardo da Vinci, he made it free-hand. Figure 3. This architect well knew that if he understood the symmetry theme he could at any time and to any extent reconstruct the original. But Villard goes farther than architectural plans and elevations. He shows us how his static symmetry was used to establish the structural part of pictures and statues, and does not even disdain the minor illustration as the accompanying examples will show.

As has been said, we to-day are weak in our design where the masters of the past were strong, so weak, indeed, that some of our more thoughtful authorities have become alarmed and dismayed over the hopelessness of our outlook. But should we despair? I think not. I feel that we have been passing through a sort of hibernating or torpid period which is about to end. We are technically proficient in almost all departments of art and craft—perhaps as proficient as were the men of any period of design history. We are, or could readily become, masters of detail, and if we could once grasp the fact that the prime element in design creation is symmetry we could become masters of the ensemble, masters of assembling or putting together units of form to produce work of enduring character. In my opinion the first step toward the acquisition of this power of ordering design will be taken when we change our method of design measurement.

We make design measurement by line or modulus and produce automatically thereby an inferior type of symmetry. The great design of the past was measured by area.

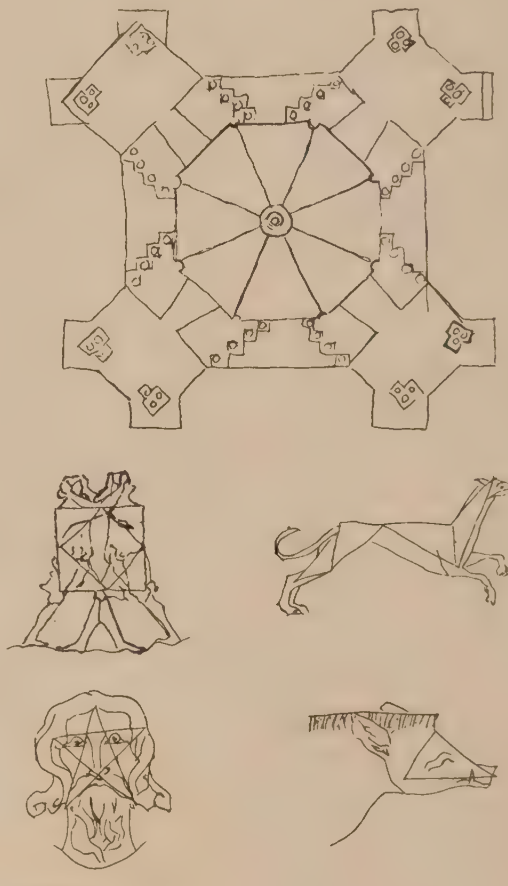


Figure 3.

When the area of a design has been determined by a unit of length or a modulus, this area is bounded by lines which are commensurable one with the other. That is, one line can be divided into another and the resulting ratio can be expressed by a whole number or a whole number and some even fractional part.

If the area of a design has been fixed by the regular figures of geometry and the subdivisions determined by logical subdivisions of these figures the result may or may not be commensurability. Either of these methods produce static symmetry and of the two the latter is superior to the former.

When we analyze a dynamic design we find that the bounding or enclosing as well as the subdividing lines are incommensurable, that is, that they cannot be divided one into the other without producing a never-ending fraction. The only exception to this is when some unit or even multiples of a unit is divided dynamically.

As a general illustration, suppose we take a design which has been worked out on an area say 2¼ by 4½. No matter what unit of length was used by the artist in fixing this area the ratio, obtained by dividing the smaller number into the larger, will always be 2, that is 2 squares. This area will remain permanently static unless we subdivide it dynamically, but to do this we must depart from line measurement and substitute that of area.

This incommensurableness or unmeasurableness of line is characteristic of the dynamic type of symmetry. Dynamic forms are measurable however as areas.

If we take a square and use one side as an end and a diagonal as a side of an area this will be a dynamic shape of a low order. If we take two squares, place them side by side and construct a rectangle the end of which is equal to a side of one of the squares and the side equal to a diagonal to the two squares the result will be a dynamic shape of the highest order.

For example: The area *a* of Figure 4 is a square and *A.B.* is a diagonal. With this data we make the area *c*. The line *D.F.* of the area *c* is equal to *A.C.* of *a* and *D.E.* is likewise equal to *A.B.*

The area *b* is composed of two squares and *G.H.* is a diagonal to this shape.

The line *J.L.* of the area *d* is equal to *G.I.* of *b* and *J.K.* is likewise equal to *G.H.*

The area *c* is a root-two rectangle, a minor shape of the dynamic group of rectangles. It is so called because a square constructed on *D.E.* has twice the area of a square constructed on *D.F.*, that is *D.E.* is a root-two line.

The area *d* is a root-five retangle, the basic shape of the highest type of the dynamic series. A square on *J.K.* is five times the area of a square constructed on *J.L.*

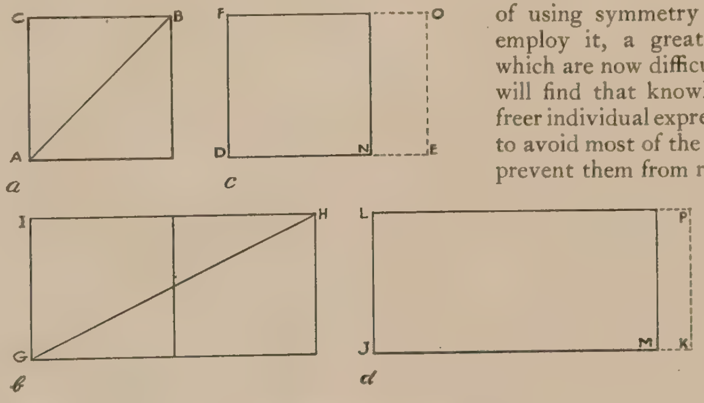


Figure 4.

The area *F.N.* is equal to the square *A.B.* and the excess area *N.O.* is the amount that the root-two rectangle *c* is greater than the square *a*.

The area *L.M.* is equal to the two squares *G.H.* and *M.P.* is the amount that the root-five rectangle *d* is greater than the two squares *G.H.*

The artist is not interested in this fact, nor need he know anything of mathematics when he uses these remarkable shapes constructively or synthetically. He may perform all the operations necessary with a string held in the two hands. But if he is compelled to analyze symmetry and to search for clues on a cold trail, then he ought to be well equipped to inspect data from different angles.

An alert designer, however, will not be content to proceed blindly with his work. He will use every available means to increase his knowledge. To help this type of man, I have worked out a simple arithmetical scheme which will enable him to go into the subject as thoroughly as he may desire.

Abundant examples of early Greek design have been found where designers have changed their method of fixing symmetry rhythm by static means to the dynamic base. We have examples of this character where the artist has changed his procedure from the static scheme of squares and multiples of these to one of the root-two order, but nothing better than root two. Other examples show a change from the simplest static to the highest dynamic, of the root-five order. And in every such case the dynamic product is superior to the static.

Let us imagine a door the width of which is a side of a square and the length a diagonal to that square, if we understand the method or methods of making a logical division of such an area, we will be able to place panelling, ornament, door-knob, keyhole, and hinges in a manner somewhat like the development of the static plan by Michelangelo in Figure 1. That is, if we left the construction lines upon this area, as Michelangelo did, the result would not be dissimilar except in the type of symmetry. If we compared the Michelangelo static area with the dynamic area of the door we would find that the door possessed an element of proportion much more refined and elegant than is possible to obtain from a square by static subdivisions.

If the door we have described belonged to a building which had been planned dynamically it would have its logical position in the general design theme as does a panel in the theme of the door. This is precisely what the Greeks did in planning their temples except they used an area fixed by a side of a square and a diagonal of two such squares as a symmetry base.

When modern artists realize the necessity of using symmetry they will find, when they employ it, a great simplification of problems which are now difficult and embarrassing. They will find that knowledge of symmetry will give freer individual expression, that it will enable them to avoid most of the mechanical difficulties which prevent them from realizing their design dreams, that it will enable them to put into their creations the character which is its due. Symmetry will enable the artist to really develop new and fresh forms, will release him from the contemptible practice of pilfering other men's ideas.

One of the most interesting and instructive lectures recently given before the Architectural Club of New Haven, Connecticut, was that delivered by Professor Sheppard Stevens, of the Architectural Department of the Yale School of Fine Arts, on a "Vacation Tour Through Italy." The lecture was illustrated by beautiful stereopticon views and showed the most important churches, palaces, and other buildings, as well as the ancient architecture of Rome and early examples of Florentine architecture in the lovely city of Florence. Professor Stevens, who gave the architects a similar lecture on Architecture of India, pointed out many details which traced the history of the different schools of architecture met with in Europe and spoke of the ease and comfort with which travelling could be made through Italy at the present time.

Construction of the Small House

By H. Vandervoort Walsh

Instructor in Architecture, Columbia University

Article XIII

LESSONS TAUGHT BY DEPRECIATION

WHAT happens to the small house after it has been built? This is a question which should interest both the architect and builder, because from the answer can be had some very important lessons in construction.

To know where the weather, mechanical wear and tear, fire and water, begin the decay of the house is to know where to specify materials which will give the greatest durability to the whole.

This decay is called the natural depreciation of the house, but it is the architect's duty to make this as insignificant as possible. It is essential to study the local conditions under which the house will have to stand. At the edge of the seashore, where the damp and salty winds are prevalent, one would be foolish to specify metal for screens, gutters, valleys, and leaders, which tended to go to pieces by corrosion. But in a dry locality, the specifying of, say, galvanized iron for these parts would save money on the initial cost, and might not cause too great depreciation.

Likewise, the choice of the general materials of which the house is built should be influenced by the experience of the neighborhood. A wooden house in a seashore resort requires painting very often, and perhaps a brick house would in the end be more economical. A wood shingle roof on a house, tucked away under the dense trees of a lake shore, would have a very short life, and the use of some more permanent material would justify the additional expense.

Indeed, on all hands, in every locality, we have lessons to learn concerning what happens to a house after it has been built, and how it might have been avoided. To stimulate the reader to observe more in this direction we will call attention to some of the most obvious ways in which a house depreciates.

Examine most houses which have stood for ten to twenty years and it will be found that the foundations in nearly every case have settled unevenly, to a greater or less extent. This may be due to unforeseen causes, such as the action of underground water, frost, and disintegration of mortar, but generally it is the result of foundations built by the rule of the thumb. A wooden house seems so light that the average builder never bothers to consider the footings nor the loadings on them. Many walls are built without any footings at all, even though part of them rest on stone and other parts on earth. Now, of course, nothing serious as a rule comes of this slightly uneven settlement, but, add it to other things, and the depreciation of the property goes on rapidly.

As an example of this, one house might be mentioned which was greatly marred by the settling of the footings under the porch columns. These columns supported the second floor, which projected over the porch. The amount of settlement was only about two inches, but this caused the windows to lose their rectangular shape, making the operation of the sash impossible, destroyed the drainage direction of the gutters, necessitating the relocation of the leaders and the repitching of the gutters, opened up the crack between the floor and the baseboard, and made a large crack in the plaster wall and ceiling. The cause of it all was the building of the porch column footings upon filled-in earth, while the foundations of the rest of the house were upon rock. Uneven settlement was sure to take place under such conditions.

This same damaging effect of settlement is often noticeable in wooden frame houses, which have not been properly constructed to avoid uneven distribution of cross-section wood in the walls and partitions. Wherever there is a difference of cross-section of wood in two walls which support the same beams, there is sure to be uneven settling. The wall which has the greatest number of linear inches vertically of horizontally laid timbers will settle the most. This will cause sagging floors, sprung door-frames, and open joints.

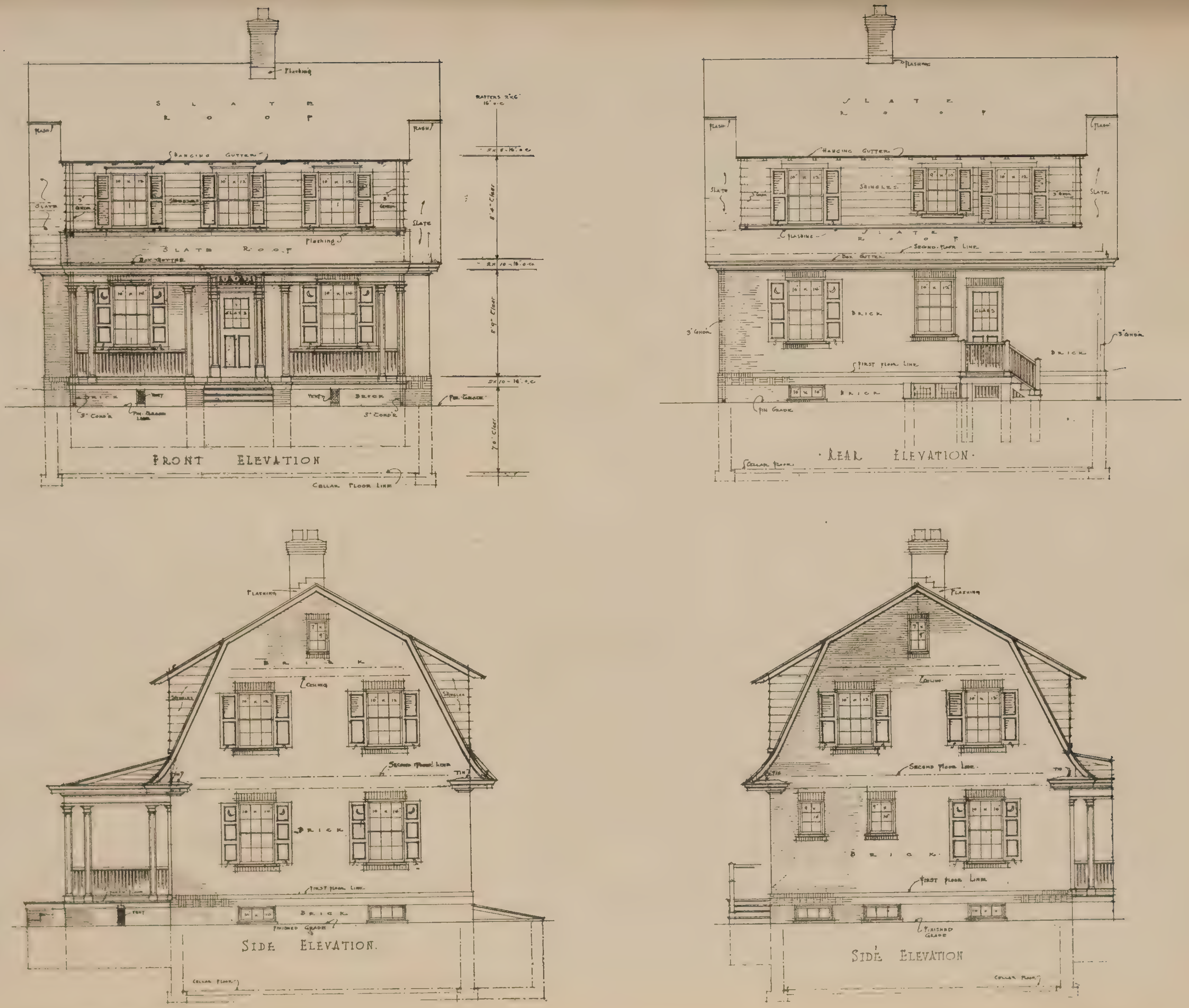
Many cracked stucco walls on the exterior have been caused by too much cross-section wood in their framing. A balloon-framed wall makes the best backing for an outside wall of stucco, because the studs extend from sill to plate without any horizontal timbers intervening.

But it can always be predicted that the masonry walls and parts of the house will settle before the wooden walls and partitions. The chimney will settle more rapidly than the surrounding partitions of wood, and should, for this reason alone, be built entirely independent of any other part of the structure. Where the wooden-framed wall butts into a chimney, and the plaster is continuous over the brick of the chimney and the studs of the wall, there is sure to develop a crack at the joint because of the unequal settlement, unless the plaster is reinforced at this point with metal lath. Likewise, it is bad to support any part of the wooden floor upon a girder which bears upon the chimney, not only on account of the excessive sinking of the chimney, but the subsequent danger of fire which it creates.

A very bad method of constructing a chimney was imported from Europe, years ago, which develops serious fire dangers from its manner of settling. Instead of flashing and counterflashing the joint of the chimney with the roof, this method employed the use of a projecting course of brick begun at the level of the roof. Thus the part of the chimney above the shingle roof was made larger than that underneath, and the outward step was used as a weather lap over the roofing material, and no flashing was needed to make the joint tight. Now, when the chimney settled faster than the roof, as it would, the upper part could not drop, but was caught upon the roof, and lifted from the lower part. This made a crack through which the hot gases could escape to the attic timbers and start a fire.

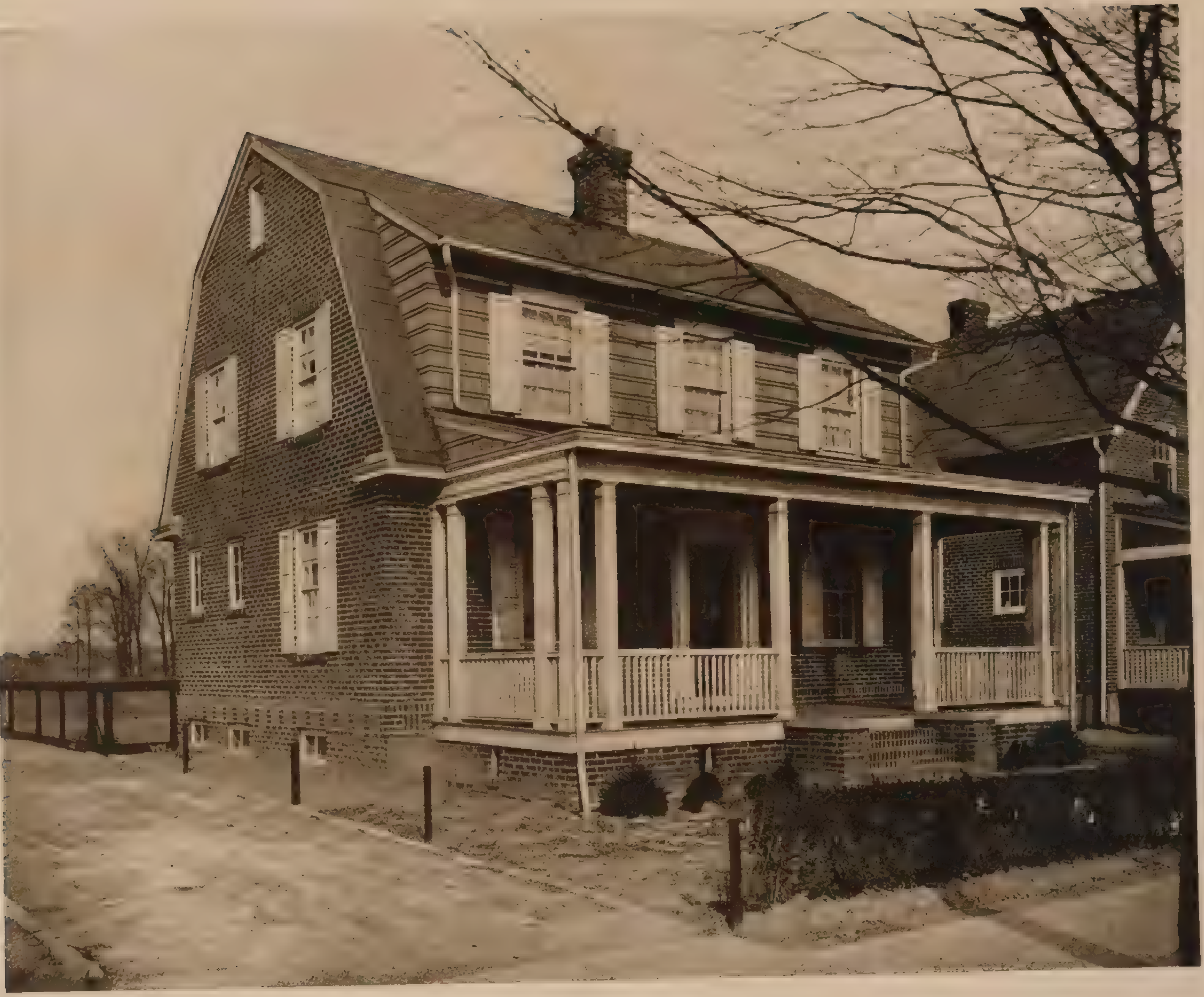
On the other hand, wooden-framed walls will settle badly, too, when dry-rot sets into the sills. This is a very common defect in old houses, and generally, when any remodelling must be done, the sills have to be cut out and new ones set into place. Dry-rot in the sills is caused by excessive dampness with no circulation of air. Very often

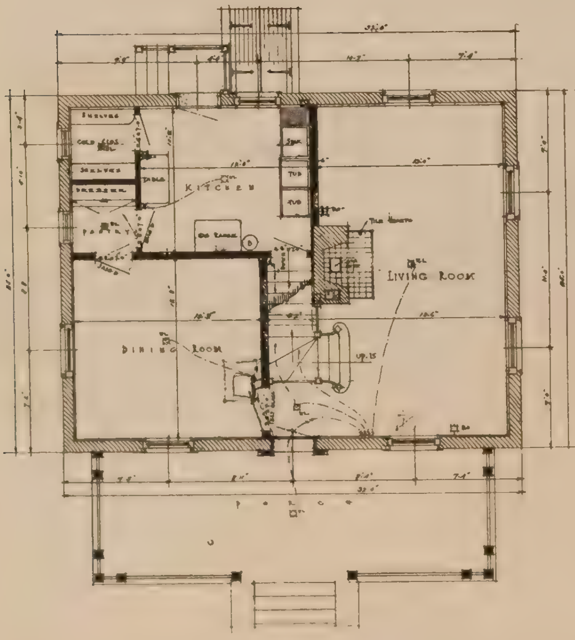
(*Continued on page* 349)

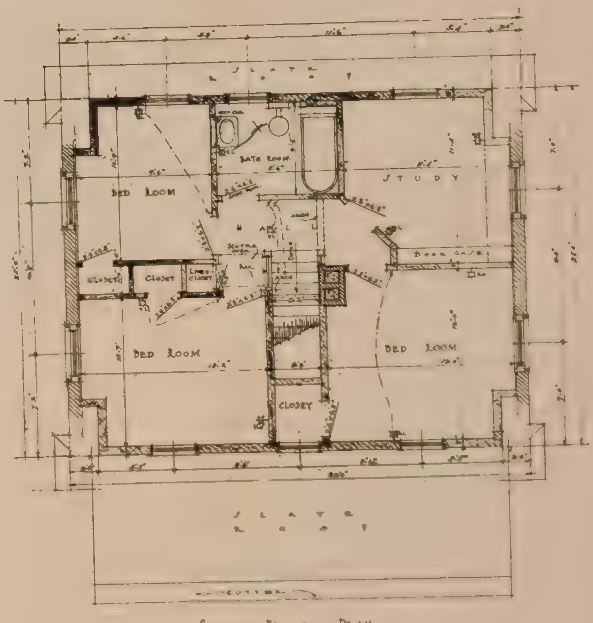


ELEVATIONS, RECTORY FOR ST. JAMES CHURCH, TRENTON, N. J.

Fowler, Seamon & Co., Architects.



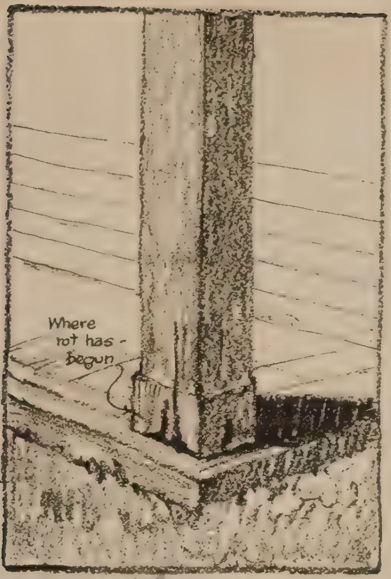




Second · Floor · Plan

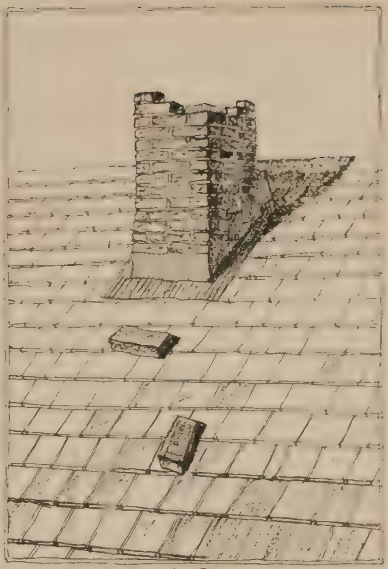
RECTORY FOR ST. JAMES CHURCH, TRENTON, N. J.

Fowler, Seamon & Co., Architects.

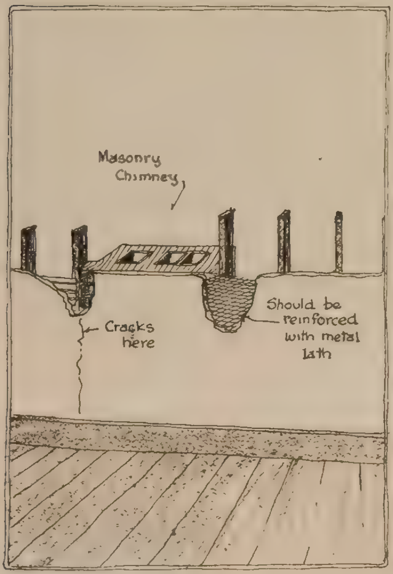


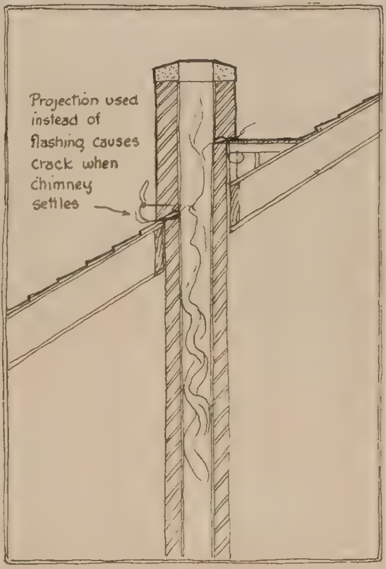
Solid Column

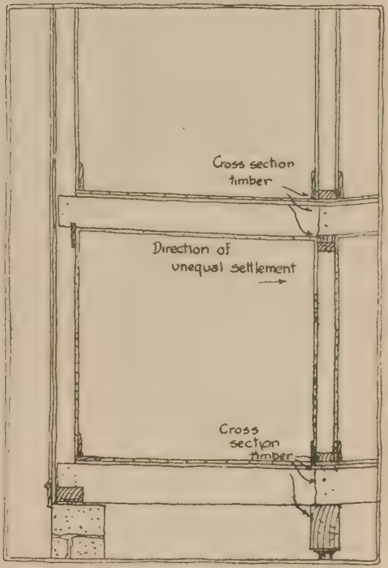
Uneven Settlement



Weathered Chimney




Projection used instead of flashing causes crack when chimney settles



a builder may take great pains to fire-stop his walls around the sill, but forget to leave ventilation space, and the sill is soon attacked by the fungus of rot. Unless timbers which come in contact with masonry are treated with creosote, or painted, they will be subject to dry-rot in the average damp, warm climate.

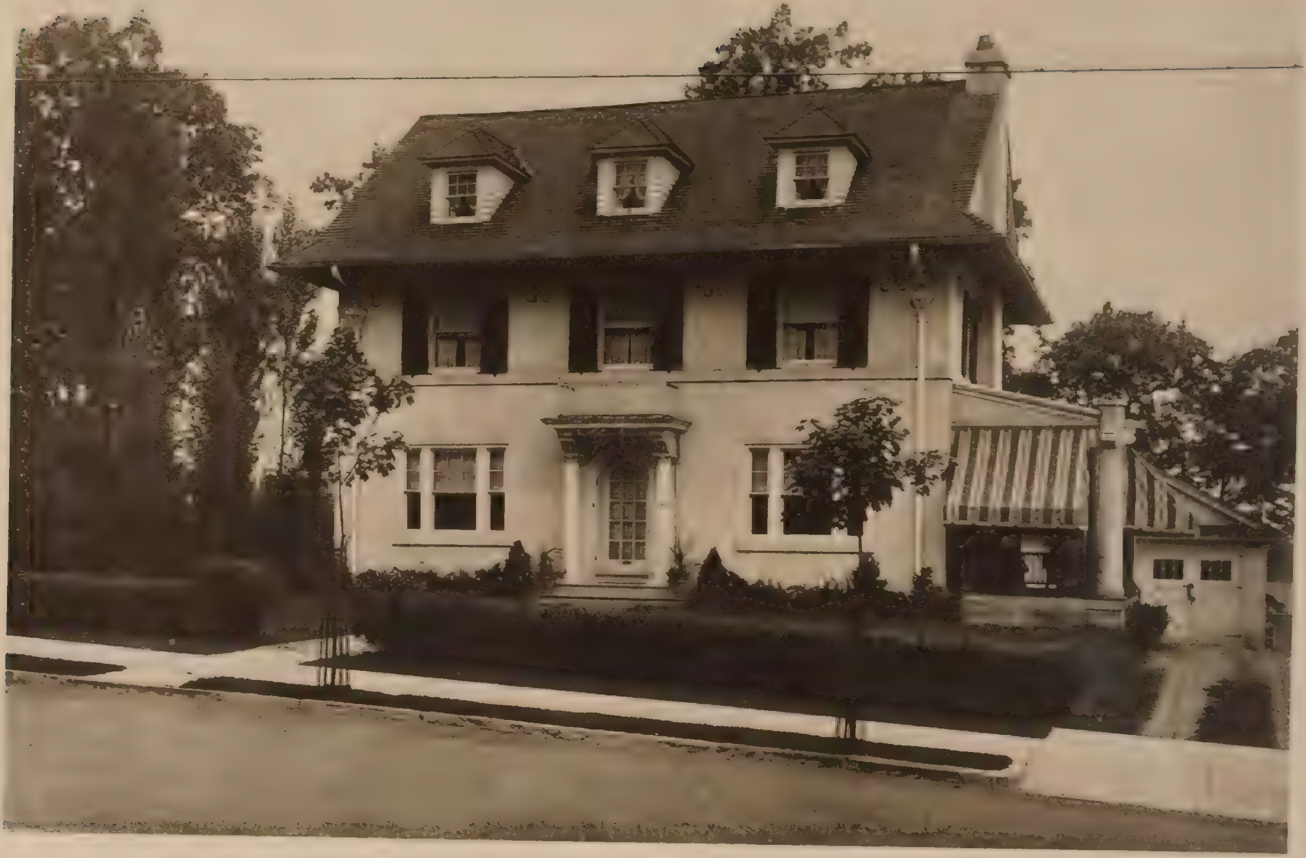
Many porch columns rot at their base and permit the settling of the roof. Solid columns are the least durable in this respect, for in a short time their core will go bad and the lower part will crumble. Wood base blocks for columns should be perforated with holes to permit the seepage of water under them. Cast-iron bases are preferred to the wooden one, when the column is to set upon a masonry porch floor.

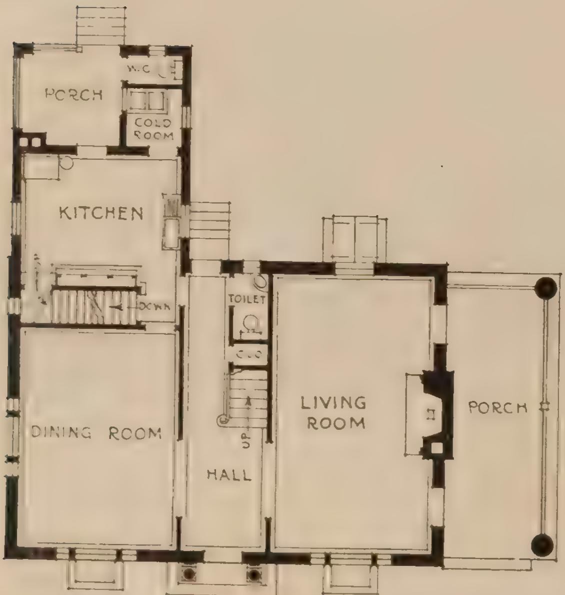
Settling causes many other defects besides those mentioned. The house drain may be broken and the cellar flooded with sewage, if the wall around the pipe has been cemented up and it settles. The pitch of drain-pipes may be altered so much that back-up action of waste water may occur; steps may be caused to sag so that they become unsafe; lintels may be broken.

The movement of the footings by frost is another evil that is noticeable in many old houses. Sidewalks are cracked, porch stairs loosened, drains in areas closed. In most cases like this the footings are not extended far enough below the frost-line, or insufficient cinder foundations are laid.

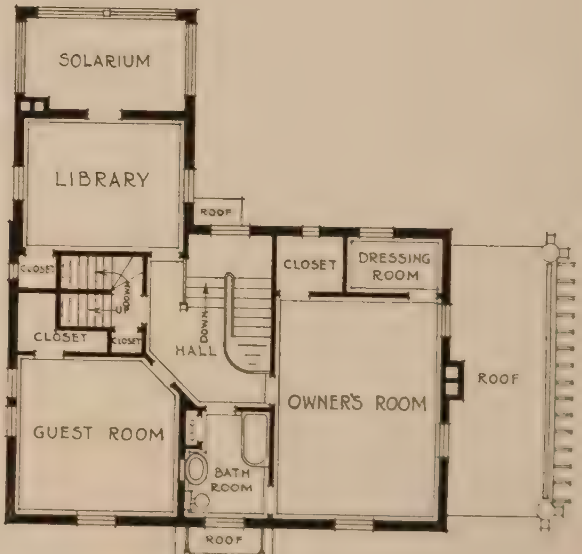
But the action of freezing water leaves its marks on other parts of the house. Unless some corrugations in leaders are made, the ice in the winter may burst them. The mortar on copings is loosened by this action, and on chimney tops, where heat and gases also help, the brickwork soon breaks down. Many failures of stucco work are directly caused by frost, and sometimes water leaks into the cells of hollow terra-cotta blocks, freezes and bursts out the shell-like sides. The putty around the window is loosened by the drying action of the wind, and the prying action of the frost. Water-supply pipes in walls near the outside are

(*Continued on page* 351)





FIRST FLOOR



SECOND FLOOR

HOUSE AT POTTSVILLE, PA.

C. E. Schermerhorn & Watson K. Phillips, Architects.

(*Continued from page* 349)

broken when the cold winds freeze them, and the exposed gas-pipes in the chilly parts of the cellar are often entirely clogged in a severe winter. Leaks around windows in masonry walls are started by frost, and it is common to see tile on the porch floor or brick borders and bases loosened by the same powerful agent that breaks boulders from the mountainsides.

The heat of the sun is another destroyer of the house. It is death on paint, for it is forever baking it in the steam of the dew of the previous night, and when the body of linseed-oil is gone, the paint is no good. And it dries out the wood too much some days and spoils the jointing. It warps boards up and opens the mitred joints. It causes the wood shingles to crack and shrivel, so that when the next heavy rain comes the ceilings are stained by leaks. Tar for the roof and soft cements are caused to run out of place.

Then, too, there is the deteriorating influence of the artificial heat inside of the house. The fireplace tiles are baked loose from their mortar beds, cast-iron dampers are cracked, chimneys are clogged with soot and catch fire, and thimbles which receive the smoke-pipe of the furnace are broken. But the heat from the radiator does much damage. It blackens the ceiling above it by hurling little particles of dust up against it; it warps and twists the wall-paper; it misshapes the doors and windows, and breaks loose the strips of veneer, and it often spills water over the floor to ruin the ceilings below.

Added to all of the above depreciation is the natural wear and tear caused by the tenants. Floors are worn to splinters where they were of flat grain wood; thresholds are thinned down; stair tread scooped out. Plaster is broken by moving furniture, and decorations stained by accidents of all varieties. Hardware, like locks, hinges, and bolts, is broken.

Particularly is the mechanical equipment of the house subject to such deteriorating influences. Plumbing fixtures are broken, pipes are clogged, and joints made to leak through the corroding action of strong acids poured down the pipes. Radiator valves are turned out of adjustment, boilers are burned out, and hundreds of other things happen to this part of the house because of careless hands.

Thus we may say that the important factors of depreciation which an architect should keep in mind are unequal settlement, action of frost, washing-out effects of rain-water, corrosion, the heat of the sun, the artificial heat of the furnace, and the foolishness of tenants.

Unequal settlement can be prevented by carefully examining the construction, and the action of frost, heat, and sun can be minimized by the use of proper materials, and the foolishness of tenants can be partly offset by selecting those mechanical devices which are as near fool-proof as human hands can make them.

(*Continued from page* 342)

Hungerford Brass and Copper Co., 510 Arch Street, Philadelphia. Possession was taken by the Hungerford Company September 1, and they purpose carrying a full line of brass, copper, Tobin bronze, nickel silver, and monel metal products in Philadelphia, in sheets, rods, tubes, wire-nails, tacks, etc.

Philip Horton Smith, member of the firm of Kilham & Hopkins, architects, from 1914 to 1921, and Edgar T. P. Walker, of the office of Cram & Ferguson, architects, from 1910 to 1921, announce that they have formed a partnership for the general practice of architecture, under the firm name of Philip Horton Smith & Edgar T. P. Walker, architects, with office headquarters at 1260 Little Building, 80 Boylston Street, Boston, Mass.; Mr. Smith, 42 Chestnut Street, Salem; Mr. Walker, East Street, Hingham. Samples and catalogues requested.

ARDEN GALLERY.—On October 31 Arden Gallery, Scribner Building, 48th Street and Fifth Avenue, will open its season with the Twenty-third Annual Exhibition of the American Society of Miniature Painters, which promises to be of unusual quality, and to the miniatures will be added as a special feature the display of a delightful group of Swedish porcelains made at the Rostrand factory in Stockholm and designed by Mrs. George Oakley Totten, Jr. (Vicken Van Post), the distinguished Swedish sculptor. These figurines are modelled with much greater art than those of the Dresden and Vienna ware. Mrs. Totten's creations are fascinating in their variety of subject and fanciful beauty. Not only is the modelling accomplished but her feeling for line and color is both original and charming. The selected examples gathered in Arden Gallery we believe have not been equalled since the period of the Tanagra figurines with which we are all familiar. A series of table decorations arranged by Arden Studios with the co-operation of several well-known artists will also be shown in this exhibition. There will be no private view, but the gallery will be open to the press on the morning of October 31 before the public opening in the afternoon.

Heating with Fuel Oil.—Ordinary fuel oil is the cleanest, most convenient, and most satisfactory form of fuel for heating, now that a simple, practical, and durable machine has been perfected for burning it, without noise, odor, or dirt.

The market price of fuel oil up to this time has remained around five cents per gallon. But even at ten cents per gallon, heating with fuel oil will be found a much more desirable proposition and no more costly than the old method of heating with coal.

For instance, one of the smaller-sized Hardinge oil-burning machines, Hardinge Brothers, Inc., Chicago (capable of heating the average ten-room residence), can be turned down so low that its fire will consume not more than one-half gallon of fuel oil per hour. On a mild winter's day when the fire is turned low it would require only about twelve gallons of oil for twenty-four hours' heating. At four cents per gallon this would be less than fifty cents for fuel for heating the home one whole day and one whole night.

On the other hand, when a large, hot fire is needed it can be had instantly and as simply as turning on the electric lights. It takes only two or three minutes to light the fire when the boiler is equipped with a Hardinge oil-burning machine, and the fire is hot as soon as it is lighted. Therefore, the fire can be completely extinguished without any of the previous dread of rebuilding same.

Jones & Roessle, architects, announce the removal of their architectural offices from 1025 Maison Blanche Building to Suite 817 Maison Blanche Building, New Orleans.

Walter Pleuthner, architect, has removed his offices to 132 East 40th Street, at Lexington Avenue, New York City. Material and catalogues, of late issue, of interest to architects, decorative architects, and landscape architects are requested.

Allen & Collens, architects, Boston, Mass., have moved their offices from 40 Central Street to 75 Newbury Street.

Concrete Construction

By DeWitt Clinton Pond, M.A.

EIGHTH ARTICLE

FOR much of the information required for the design of the first-floor beams and girders, which will be discussed in this article, the reader should refer to the first article. In this will be found a general description of the 395 Hudson Street Building and plans—both architectural and structural—of the portion of the first floor which is being designed. In the first article are given also the beam and girder schedule and the slab schedule, and the design of a typical beam and slab was investigated. It was found, however, that the design of the beams could not be definitely determined upon until the girders had been designed, and the girders could not be designed until the column sizes had been determined.

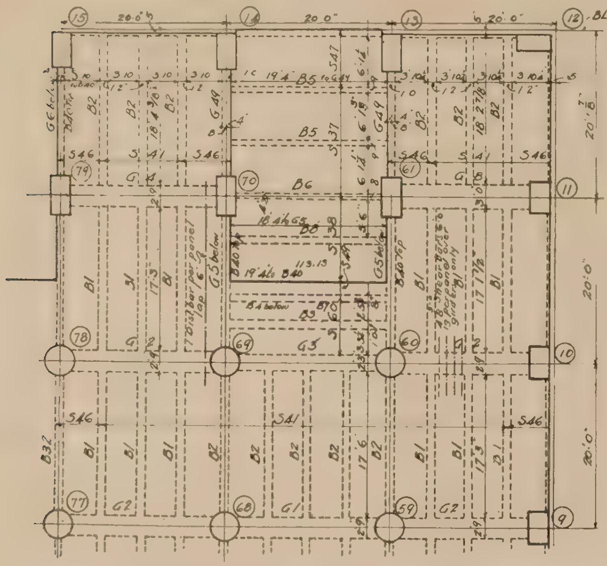


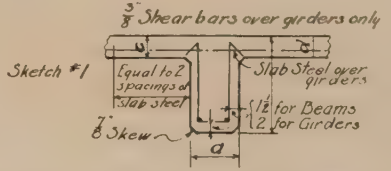
FIGURE II

In the articles following the first the designs of columns and footings were discussed and it is now possible to complete the investigation of the beams and girders of the first floor.

If a typical girder can be found in the floor panels under consideration, such a one would be *G1* between columns 59 and 68. In general, it is necessary to determine the depth and width of such a girder in advance if possible in order to determine its weight. In the present case it will be safe to assume that the girder will be as deep as the architectural considerations will allow. The greatest allowable depth is 3 feet 8 inches, or 44 inches. Assuming a breadth of 2 feet 6 inches, or 30 inches, the area of the girder will be 1,320 square inches. It will weigh 1,320 pounds per foot of length. As the columns are 3 feet 2 inches in diameter, the clear span will be approximately 17 feet and the total weight of the girder can be found to be 17 × 1,320 = 22,400 pounds.

Slab Schedule					
Mk	Total No Slabs	Slab Thickness	Steel Bars Size and Spacing	Remarks	Near Col.
S 37	2	4¾	½"⌀ Rods 8½" o.c.	1-⅜" Dist Bar per panel	14
S 38	2	4½	½"□ Bars 8½ o.c	1 ⅜ Dist. Bar per panel	70
S 41	18	5"	½"⌀ Rods 7½" o.c.	1-⅜ Dist. Bar per panel	59
S 46	10	5"	½"⌀ Rods 6 o.c.	1 ⅜ Dist Bar per panel	9
S 47	1	4¾	[illegible]"⌀ Rods 8½ o.c	1 ⅜ Dist Bar per panel	13
S 60	2	4¾	⅜"□ Bars 5 o.c.	1 ⅜" Dist Bar per panel	

FIGURE IV


⅜" Shear bars over girders only
Sketch #1
Equal to 2 spacings of slab steel
Slab Steel over girders
1½ for Beams
2 for Girders
⅞ Skew
a

List of Beams & Girders											
Mk	Total No	Size				Square Steel				Stirrups	Sk.	Near
		a	b	c	d	D.B.	Str.	No. Layers	In Top	Plain Steel	No.	Col.
B1	12	1'-2"	2'-6"	5"	5"	2-1⅛	2-1⅛	1		10-½"⌀	1	60
B2	11	1'-2"	2'-6"	5"	5"	1-1⅛ 1-1¼	2 1¼	1		10-½"⌀	1	59
B4	1	1'-1	2'-6"	0	4½	2-1¼	3-1¼	1	2-1"□	14-⅜"□	14	60
B5	2	9"	2'-6"	4¾"	4¾	1-1¼"	2-1¼	2		10 ⅜"□	1	13
B6	1	8"	2'-6"	4½"	4¾	1-1¼	2-1⅛	2		10-⅜"□	1	61
B7	1	8"	1'-0"	4½"	9"		2 ¾"	1		4 ⅜"□	13	60
B8	1	8"	2'-6"	4½"	4½"	1-1¼"	1-1⅛ 1-1¼	2		10-⅜"□	1	61
B32	1	1'-0"	2'-6"	10½	5"	1-1¼	2-1¼"	1		10-⅜"□	1	77
B40	3	10"	1'-0"	0	5 4¾		2-¾"	1		4-⅜"⌀	24	60
G1	1	2'-9	3'-8"	5"	5"	5-1¼	5-1¼	1		12-½"□	1	59
G2	4	2'-9	3'-8"	5"	5"	6-1¼	6-1¼	1		12-½"□	1	59
G3	1	2'-3	3'-2"	5"	4¾	2-1¼ 2-1⅛	3-1¼ 2-1⅛	1		6-½ [illegible] 6-⅜ [illegible]	1	60
G4	1	2'-9	3'-8	5"	5"	7-1¼ 1-1⅛	7-1¼ 1-1⅛	2		12-½"□	1	70
G5	2	1'-8	3'-6"	4½	0	3-1¼	2-1¼ 2-1⅛	1		20 ⅜"□	20	69
G6	1	1'-0"	3'-4"	4¾	0	1-1¼ 1-1¼ SB	2-1¼	1		20 ⅜"□	15	70
G8	1	3'-0"	3'-8"	5"	5"	3-1¼	10-1¼ 1-1⅛	1		14-⅜"□ 6 ⅜"□	1	61
G4	2	1'-0"	6'-10	5"	4¾		3-1⅛"	1		20-⅜"□	9-34	14

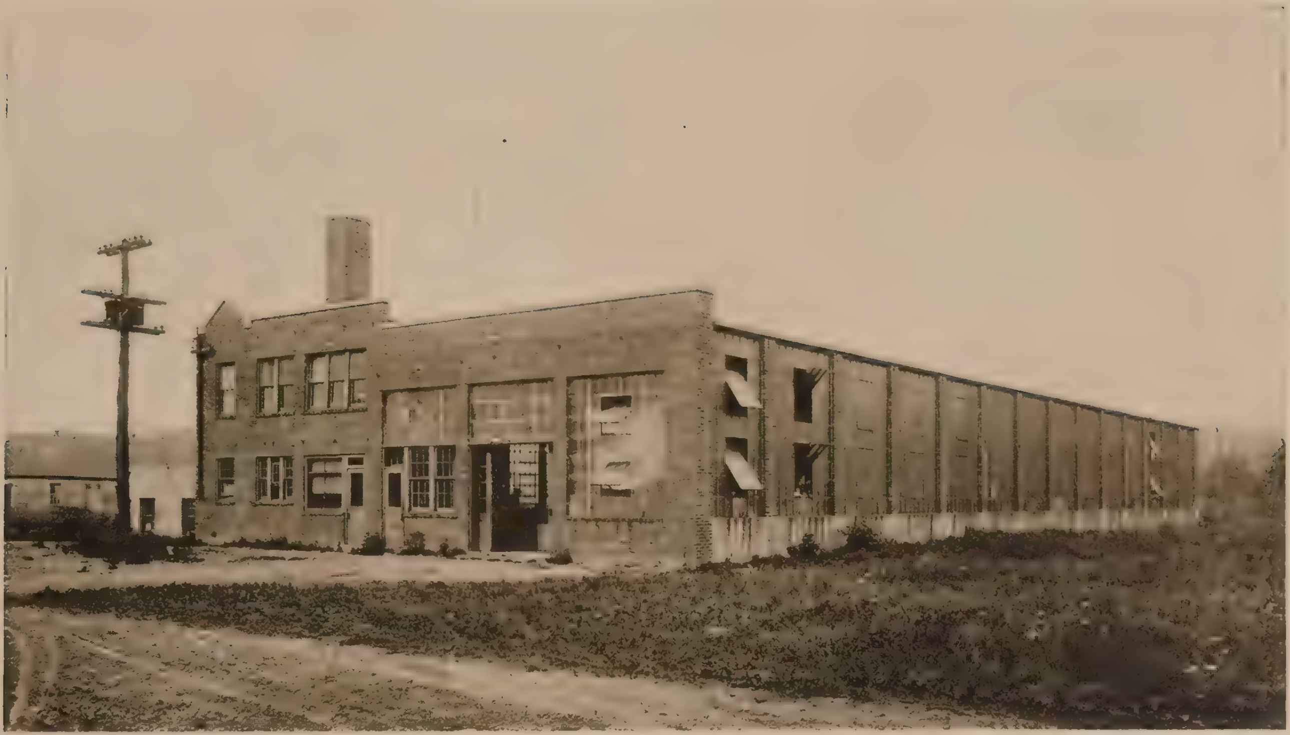
FIGURE III

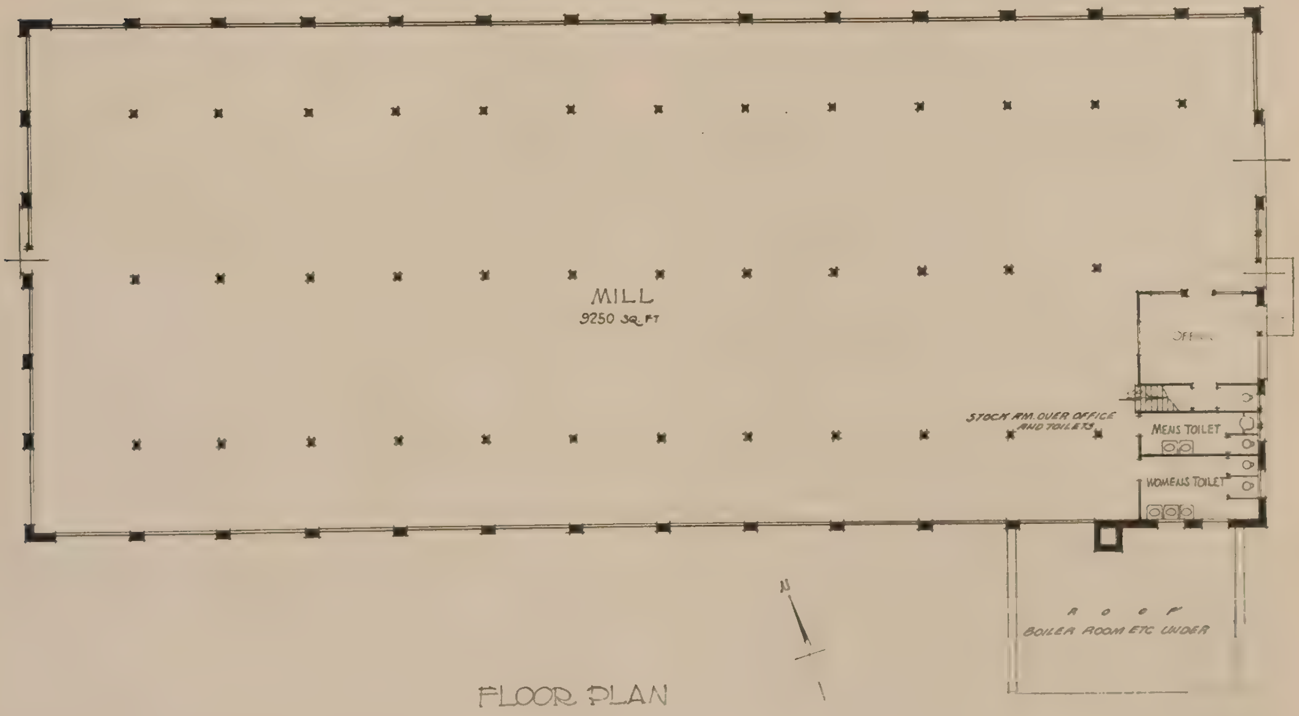
There will be added to this the live load of the floor area directly over the girder. The girder being assumed to be 2½ feet wide, there will be 2,500 pounds load on each lineal foot and a total load of 42,500 pounds. The combined weight of girder and live load will be 64,900 pounds. It has already been determined that each beam will be loaded with 100,187 pounds, and as there are three beams between columns the total weight upon the girder will be 300,500 + 64,900 = 365,400 pounds. One-half of this load would be 182,700 pounds, which will be taken tentatively as the shear. The width of the girder can be determined by dividing the shear by the effective depth multiplied by the allowable unit shear.

$$b = 182{,}700 \div (\tfrac{7}{8} \times 42 \times 150)$$
$$b = 33 \text{ inches, or 2 feet 9 inches.}$$

The condition of loading on the girder is shown in Fig. XX. The loads consist of three concentrated loads and a uniformly distributed load. The uniform load is considered as being larger than the one determined above, as the beam is increased in thickness from 2 feet 6 inches to 2

(*Continued on page 354*)





WEAVING–MILL FOR R. M. BURCH, TENAFLY, N. J. R. C. Hunter & Bro., Architects.

The large steel sash on all four sides with the small supporting piers give an abundance of daylight on the looms. The building is of mill construction, has a maple floor on sleepers over a concrete base, composition roof, steam-heating system, plumbing and electric light and power equipment. The machines are driven by individual motors. The cost of the completed building, built in 1916, was $13,777.

(*Continued from page 352*)

feet 9 inches. The reactions become 184,000 pounds each, and the upward moment due to one will be 184,000 × 10 = 1,840,000 foot-pounds. The downward moment due to the concentrated and uniform loads will be:

$$\begin{aligned} 100{,}190 \times 5 &= 500{,}950 \\ 33{,}800 \times 4.3 &= 145{,}300 \\ \hline &\ 646{,}250 \end{aligned}$$

The total moment will equal 1,840,000 − 646,250 = 1,193,750 foot-pounds. The stress in the steel will equal:

$$S = \frac{1{,}193{,}750 \times 12 \times 2 \times 8}{3 \times 7 \times 42} = 260{,}000 \text{ pounds}$$

$$\frac{260{,}000}{16{,}000} = 16 \text{ square inches.}$$

The steel can be made up out of ten 1¼-inch square bars, of which five will be double-bent and five will be straight.

The next item to be considered is the design of the stirrups. It has been determined that the shear will be 150 pounds per square inch, as the breadth of the beam was determined on this basis. The calculations for the determination of the number and size of the stirrups are given below.

$\frac{110}{150}$ × 17 = 12.45 feet, or 150 inches.
33 inches × 150 = 4,950 square inches.
4,950 × 55 = 272,250 pounds shear.
½-inch-square stirrups will have a value of 8,000 pounds per stirrup and there will be 34 required.
8 square inches of bent-up steel will have an effective area of 5.6 square inches, and will take the place of 11 stirrups at each end, or 22 stirrups at both ends.
There will be required 12 stirrups made up of ½-inch square steel.

This completes the design of the typical girder. The next girder to be designed will be *G2* and the only difference between it and *G1* is that it is a semi-continuous girder, and the moment is six-fifths greater than the one used above. If there were 16 square inches of steel required for the continuous girder, there will be 19.2 square inches required for the one under consideration. The area can be made up of twelve 1¼ square bars, six will be double bent and six straight. The stirrups will be the same as determined for the continuous girder, as the shear remains the same.

G4 differs from both *G1* and *G2*, as the moment is the same as for a simple beam and will be the same as determined in the first calculation for *G1*, or 1,193,750 foot-pounds.

The stress in the steel can be determined in the usual manner from the moment.

$$S = \frac{1{,}193{,}750 \times 12 \times 8}{7 \times 42} = 390{,}000 \text{ pounds.}$$

$$\frac{390{,}000}{16{,}000} = 24.4 \text{ square inches.}$$

The steel can be made up of fourteen 1¼-inch square bars and two 1⅛-inch square bars. One-half of these will be double-bent and the other half straight. The stirrups will be the same as determined above.

The area of steel required for *G4* could have been determined by multiplying the area required for *G2* by ⅚.

G8 differs from the girders already designed as the span is less. The wall along which are columns 10, 11, and 12 is not at right angles with the wall along which are located columns 13, 14, and 15, and because of this the span between columns 61 and 11 is much less than between columns 9 and 59. The actual condition of loading is shown in Fig. XXI. It will be seen that the clear span is only 16 feet, but that the concentrated loads are nearer the right support than the left, and that the right reaction will be large enough to warrant the assumption that the total shear will be greater at this support than was the case at the supports of *G1*, *G2*, or *G4*. Because of this it will be safe to assume that the girder should be wider than those which have been designed.

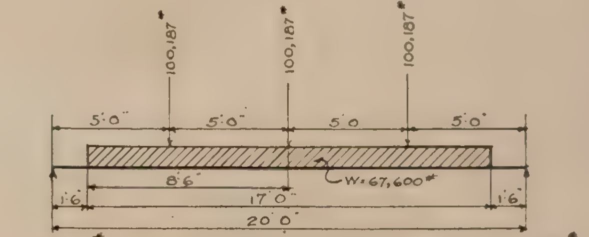


FIGURE XX

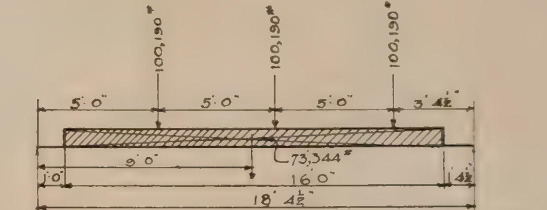


FIGURE XXI

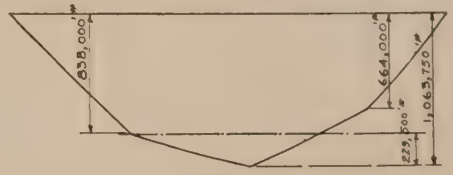


FIGURE XXII

It will be assumed that the girder should be 3 feet wide. The load per lineal foot of girder and live load will be:

$$\begin{aligned} 44 \times 36 &= 1{,}584 \\ 1{,}000 \times 3 &= 3{,}000 \\ \hline &\ 4{,}584 \end{aligned}$$

The total uniform load for a clear span of 16 feet will be 4,584 × 16 = 73,344 pounds. The reactions are determined in the usual manner.

$$\begin{aligned} 100{,}190 \times 5 &= 500{,}950 \\ 100{,}190 \times 10 &= 1{,}001{,}900 \\ 100{,}190 \times 15 &= 1{,}502{,}850 \\ 73{,}344 \times 9 &= 661{,}000 \\ \hline 373{,}904 \qquad & \ 3{,}666{,}700 \end{aligned}$$

$$3{,}666{,}700 \div 18.38 = 199{,}200 = R_2$$
$$373{,}904 - 199{,}200 = 174{,}704 = R_1$$

In order to check the breadth or thickness of the girder it will be necessary to use the formula given above to determine the thickness of *G1*.

$$b = 199{,}200 \div (\tfrac{7}{8} \times 42 \times 150)$$
$$b = 36 \text{ inches, or 3 feet.}$$

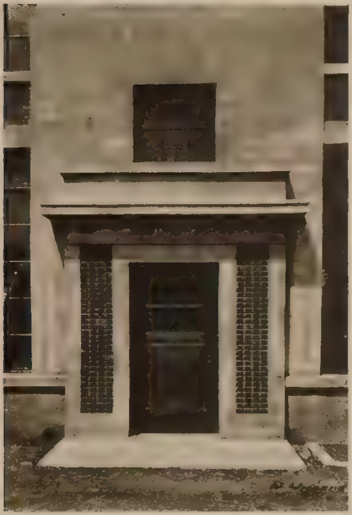
This result is in accordance with the assumption already made, and it will not be necessary to reconsider any of the calculations given above.

(*Continued on page 357*)

Bloomfield Factory and Power-House

Wm. Wiegand, Architect

Consulting Engineers, Ph. Volz, O. S. Schlich



Entrance detail.

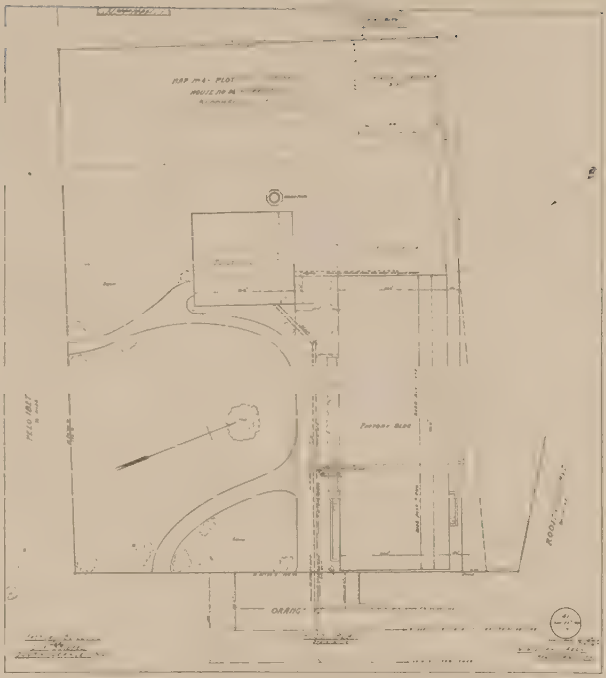
A SMALL layout of building groups constitutes part of modern development of city planning in the future.

In solving a problem from an economical as well as architectural point of view, and in special consideration of future extensions of buildings, this plan gives considerable aid.

Elimination of a monotonously long surface can be obtained by grouping the buildings as units.

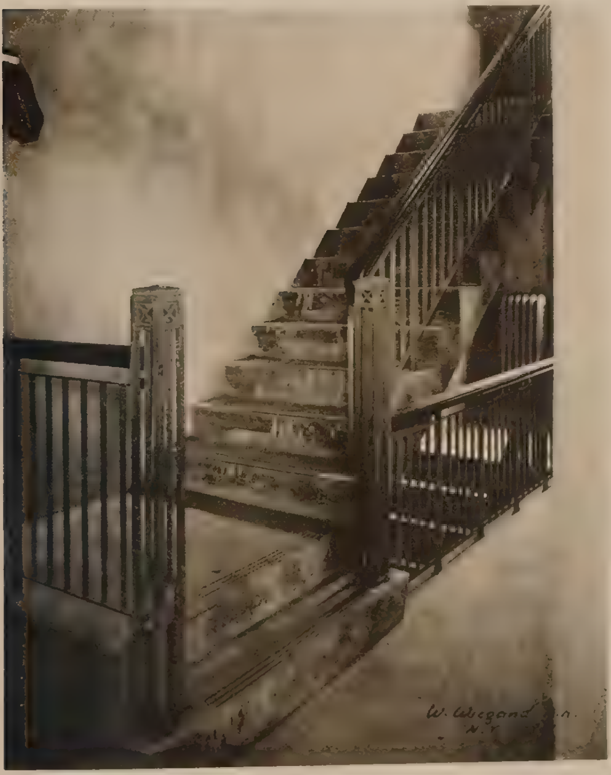
By using a combination of materials, such as brick and concrete, a most pleasing architectural effect has been achieved, which may also be noted in the treatment of entrances and in the staircase.

The carrying structures, including the roof, were built of reinforced concrete, and the curtain walls plastered with a grayish stucco so as to harmonize with the natural concrete. No paint was used except on doors, door-frames, and window-sashes.

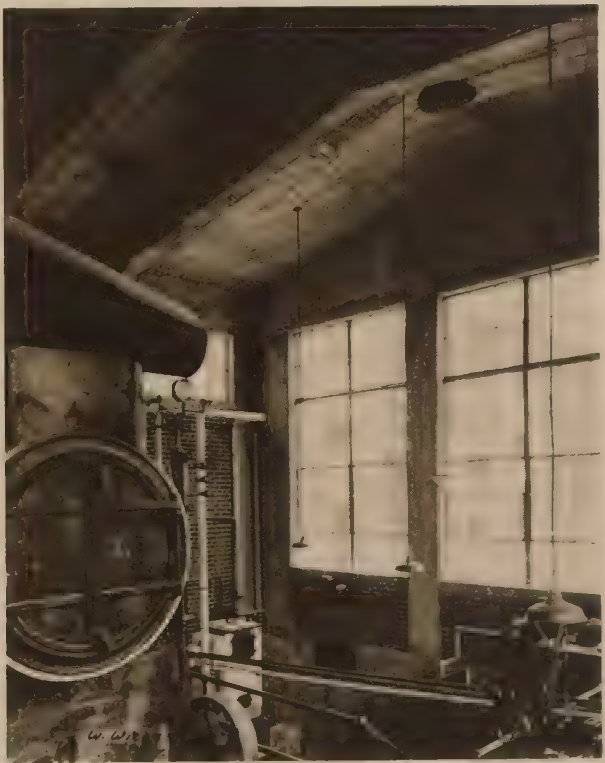


Plan, showing placing of future buildings.

The Power-house was treated similarly with exposed brick on inside walls, the roof being of reinforced concrete supported by continuous frames pivoted at the footings. The smoke-stack is self-supporting.



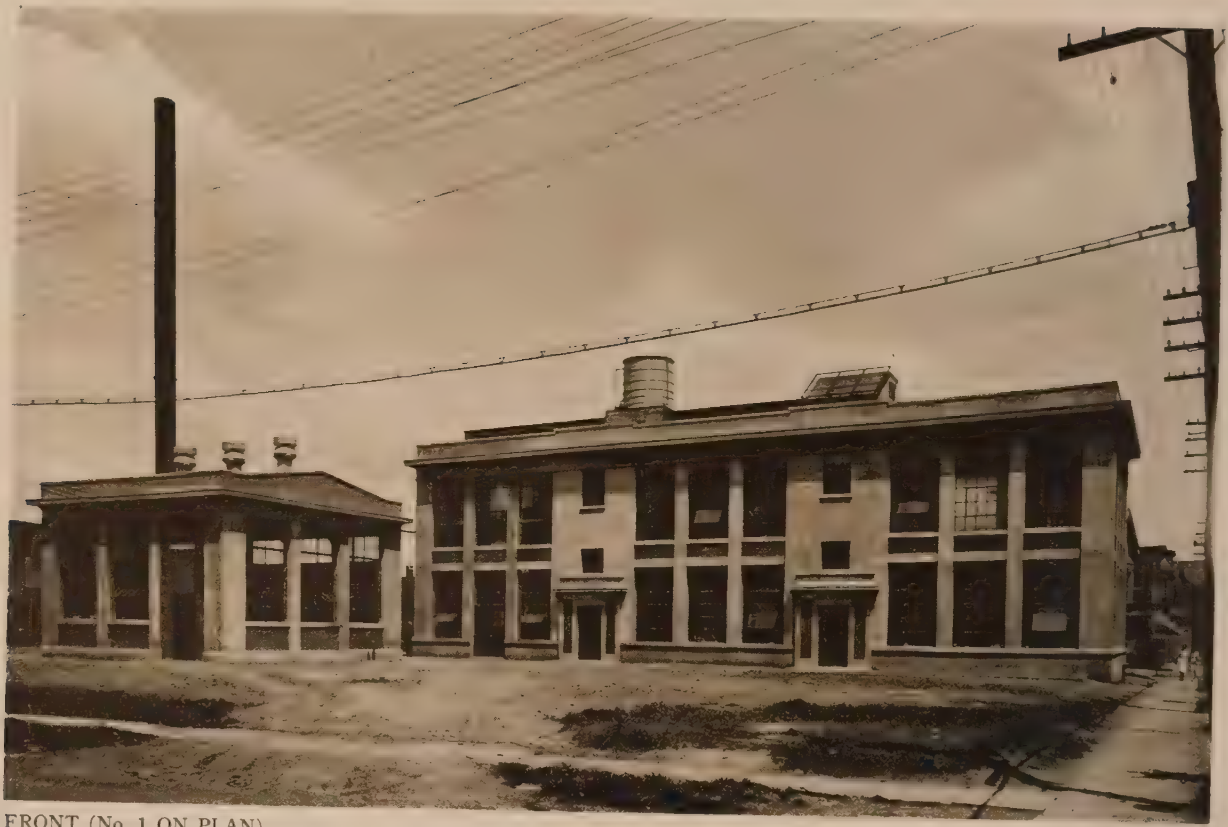
Staircase.



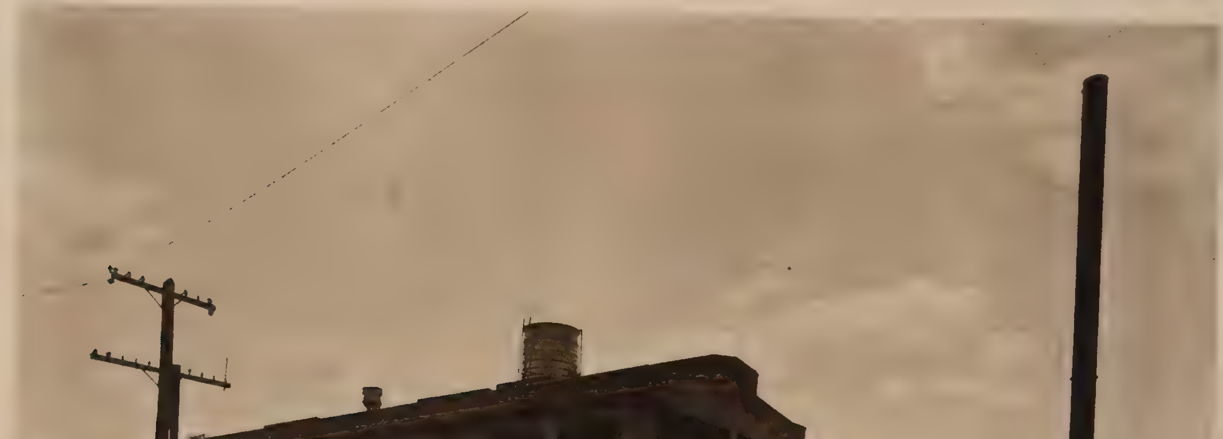
Showing construction.

Wm. Wiegand, Architect.

FACTORY AND POWER-HOUSE FOR C. F. STIEFEL, BLOOMFIELD, N. J



FRONT (No. 1 ON PLAN).



SIDE (No. 2 ON PLAN).

Wm. Wiegand, Architect.

FACTORY AND POWER HOUSE, FOR C. F. STIEFEL, BLOOMFIELD, N. J.

(Continued from page 354)

The point of maximum moment will be found at the concentrated load in the centre of the span.

$$(174{,}700 \times 10) - (100{,}190 \times 5 + 4{,}584 \times 8.92 \times 4.46) = 1{,}747{,}000 - (500{,}950 + 182{,}300) = 1{,}063{,}750.$$

This moment of 1,063,750 foot-pounds is smaller than that found for the other girders, but this is due to the shorter span.

$$S = \frac{7 \times 42}{1{,}063{,}750 \times 12 \times 8} = 348{,}000 \text{ pounds,}$$

$$\frac{348{,}000}{16{,}000} = 21.6 \text{ square inches.}$$

The combination of thirteen 1¼-inch square bars and one 1⅛-inch square bar will be used to make up this area. Of the thirteen bars three will be bent and ten straight, and the smaller bar will be straight.

The question of shear is next to be settled. It has been determined that the unit shear is 150 pounds per square inch, the clear span is 16 feet, and the width of the girder is 36 inches, and therefore the number of square inches over which the shear is applied can be found by the following calculation:

$$\tfrac{110}{150} \times 16 \times 12 \times 36 = 5{,}070 \text{ square inches.}$$

The average shear is 55 pounds per square inch, and the total shear can be found to be 5,070 × 55 = 278,800 pounds.

If five-eighths of an inch square stirrups are used each stirrup will have a value of 12,600 pounds and there will be 22.3 stirrups needed in case the bent-up steel is not considered. In the case of a simple girder the point at which steel can be bent up and the amount of steel which can be so treated must be determined from the bending moment diagram. This diagram is shown in Fig. XXII.

The maximum moment has already been determined. The moments at the two critical points can be determined in the following manner:

$$(174{,}704 \times 5) - (4{,}580 \times 3.92 \times 1.96) = 838{,}000 \text{ foot-pounds.}$$
$$(199{,}200 \times 3.38) - (4{,}580 \times 2.08 \times 1.04) = 664{,}000 \text{ foot-pounds.}$$

It will be noticed that under the first load from the left support the bending moment is reduced 225,700 foot-pounds below the maximum. It might be possible to determine the amount of steel which it would be possible to bend up at this point, but it is more customary to first select the amount of steel which it is desirable to bend and then determine the point at which this can be done. In the present case it will be desirable to bend up three of the 1¼-inch bars, which will have an area of 4.69 square inches.

In order to determine the point at which this steel can be bent up it will be necessary to reverse the reasoning by which it was possible to find the required area of steel from the bending moment. Here we have the area of steel and it will be necessary to find the equivalent moment.

$$M = S \times \tfrac{7}{8} \times d.$$
$$M = 16{,}000 \times 4.69 \times \tfrac{7}{8} \times 42.$$
$$M = 2{,}754{,}000 \text{ inch-pounds.}$$
$$M = 229{,}500 \text{ foot-pounds.}$$

On the bending-moment diagram (Fig. XXII) a horizontal line is drawn through a point representing a moment of 229,500 foot-pounds less than the maximum. At the points where this line cuts the diagram the bars may be bent up, but it is customary to allow at least six inches in order to have the bars develop a proper bond.

An important consideration which must be borne in mind in connection with the bending up of steel in a simple beam is that a sufficient amount of steel must be kept straight to develop the proper bond between concrete and steel. The New York Building Code allows a bond stress of 80 pounds per square inch between concrete and the superficial area of steel in a plain bar, and 100 pounds per square inch between the concrete and steel in a deformed bar. In the present case all steel bars are deformed.

The method of determining the difference in tension in the steel between points one inch apart, at any place in the beam, consists of dividing the shear by the effective depth. Let U represent the difference in tension per inch of length, and V represent the shear at any point. Then:

$$U = \frac{jd}{V}$$

An examination will show that difference in tension is slight near the point of maximum bending moment and is greatest at the supports or points of maximum shear. At the right reaction, in the present case, the shear equals 199,200 pounds. The difference in tension per unit of length —one inch—at this end can be found as follows:

$$U = \frac{199{,}200 \times 8}{7 \times 42} = 5{,}430 \text{ pounds.}$$

Now, 1¼-inch square bars have per each inch of length a superficial area of 5 square inches and, as the code allows 100 pounds per squa[illegible]nch, the bond stress per lineal inch will be 500 pounds. Ten bars will develop a total bond stress of 5,000 pounds.

An 1⅛-inch square bar will develop 450 pounds as the allowable bond stress between concrete and steel in an inch of length, so that ten 1¼-inch and one 1⅛-inch bars will develop a total of 5,450 pounds which is more than required.

This will make it possible to bend up three 1¼-inch bars as stated above.

Three 1¼-inch square bars will have a combined sectional area of 4.69 square inches. Seven-tenths of this will be 3.28 square inches, which will take the place of 4.2 stirrups at one end or 8.4 stirrups at both ends. This would leave 14 stirrups, which would be needed to withstand the shear.

Between the two outer concentrated loads it is well to place ⅜-inch stirrups as shown. In this case six are called for, and the number is determined by the distance on centres, which is usually considered as one-half the depth of the beam. The distance between the two loads is 10 feet. The spacing on centres of the stirrups is 22 inches, which will give five spaces and six stirrups.

G3 differs from the girders already designed in that the beams are framed into it from one side only and that there is a uniform load only on the other side. The principle of its design is no different from that given in the cases of the other girders and it is suggested that the reader check this design.

This completes the determination of the dimensions and reinforcing of the girders on the upper tier, with the exception of *G49*, which is common to beams on the first-floor level and the beams on the wagon-court level. This girder and the beams of the wagon-court will be designed in the next article.

Artistic Building Is an Obligation

By Willis Polk

IN any structural problem, be it a bridge or a building, a warehouse or a cathedral, a given amount of labor and material may, for the same capital expenditure, be made to assume either agreeable or disagreeable form—the result may possess every element of economy and practical utility, but that great, elusive, ever-sought-after quality, artistic charm, may be totally missing!

Artistic treatment need not add to cost of construction nor detract from pure utility, therefore why not have it?

Every structural problem carries with it the obligation that it will not become an eyesore in a community.

Artistic result, being desirable, why do we not always get it?

The architect strives to combine beauty with economy and utility. Beauty is his beacon and in quest thereof, if successful, he has to overcome the obstacles of utility and economy.

Failure to achieve artistic results is therefore not always the fault of the architect.

The engineer, proverbially indifferent to all intangible elements, complacently relegates artistic effect to the realm of chance. He strongly resents the intrusion of the artist, and from his view-point the less artistic the result the greater his triumph. Utility, he argues, is beauty, and that is all there is to it.

Nevertheless, the artistic appearance of all structures, whether public or private, is an obligation which rests alike upon all in authority, whether he be architect, engineer, or owner.

Architecture is the art of creating an agreeable form.

In the days of Rameses artists had their problems, and art as well as artists languished.

In these days artists have their problems, and art as well as artists languish as usual.

In the course of time—yea, even until the end of time—I opine that art and artists will continue to languish, but that will not prevent the artist from striving. Such conditions, rather than deterring the artistic spirit, will only urge it on. Art is a domineering mistress, a mistress that never relents, and once one of her votaries falls under her thrall there is no hope but the hope of success at the expense of sacrifice, a hope that makes a votary renounce all other aims and forever cling to his mistress. Such an act of renunciation is a sacred sacrifice—one that is rarely commercialized.

We can always commercialize the old masters, we can always fatten and thrive on the prowess of a dead genius, we can always feel complacent over the hunger cravings of a living artist, and that without registering a single compunction of conscience, but notwithstanding that genius, though rare, is a constantly recurring manifestation of the divine spirit, we nearly always fail to recognize it in less than two hundred years. Living artists have no sales agents, no chambers of commerce, nor well-defined avenues of approach to the milk and honey of patronage—the halls of commercialized art are not open to them and will not be unless they die.

All that the living artist has is a mythological winged steed "Pegasus."

As Mr. Burnham said: "Make no little plans; they have not magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty."

ARCHITECTURE will begin in the December number an important and valuable series of articles on some of the great French designers and decorators. The articles already arranged for are: A Master Designer of Louis XV; Nicolas Pineou; Andre-Charlés Boulle; John François de Neufforge and Some Revelations of Domestic Architecture; Charles Cressent.

The author is Henry Coleman May, who has had special advantages due to long residence in France and Europe, and who brings to his subject a freshness of view and appreciation that makes his papers good reading as well as instructive. Each article will be illustrated with plates from contemporary books.

The Architectural Exhibit Under the Auspices of the Art Association of Montclair, New Jersey.—Beginning on November 21, with a private view and an address by George Clarke Cox, Ph.D., the Montclair Art Association will give an exhibit of architectural photographs, drawings, sculpture, interior decoration, and all other things which usually go to make up such an exhibit.

The arrangement of the exhibit is under the general charge of Mr. William E. Moran, architect (New York and Glen Ridge, New Jersey), who has secured the co-operation of prominent members of the architectural profession in New York and New Jersey.

A special feature of this exhibit will be a collection of the characteristic Dutch colonial houses of New Jersey.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

of ARCHITECTURE, published monthly at New York, N. Y., for October 1, 1921.

State of NEW YORK, County of NEW YORK

Before me, a NOTARY PUBLIC in and for the State and county aforesaid, personally appeared CARROLL B. MERRITT, who, having been duly sworn according to law, deposes and says that he is the BUSINESS MANAGER of ARCHITECTURE, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

PUBLISHER: Charles Scribner's Sons	597 Fifth Ave., New York, N. Y.
EDITOR: James B. Carrington	597 Fifth Ave., New York, N. Y.
MANAGING EDITOR: None	
BUSINESS MANAGER: Carroll B. Merritt	597 Fifth Ave., New York, N. Y.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

Charles Scribner's Sons	597 Fifth Ave., New York, N. Y.
Charles Scribner	597 Fifth Ave., New York, N. Y.
Arthur H. Scribner	597 Fifth Ave., New York, N. Y.
Charles Scribner, Jr.	597 Fifth Ave., New York, N. Y.
E. T. S. Lord	597 Fifth Ave., New York, N. Y.

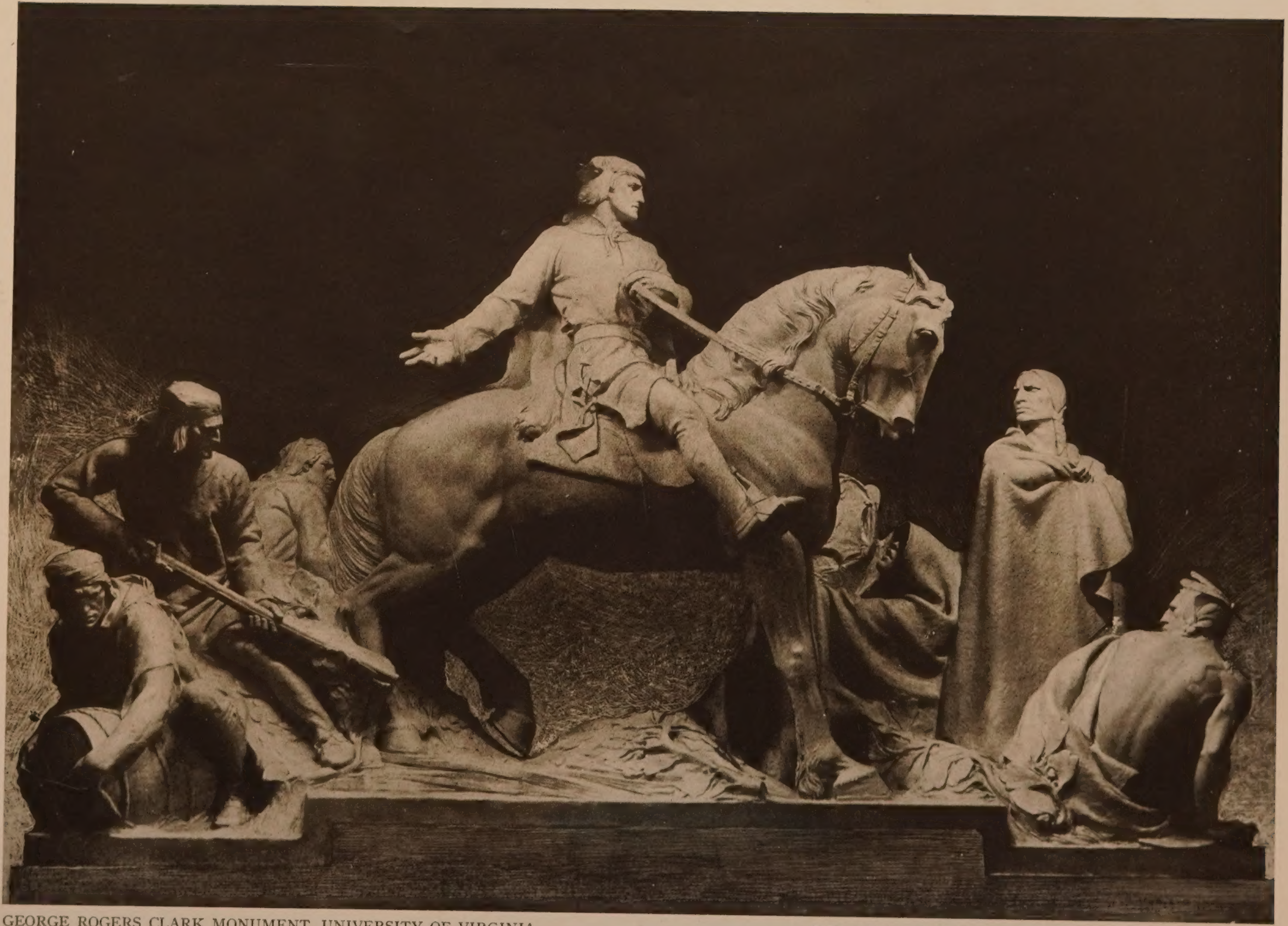
3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: . . . None.

4. That the two paragraphs next above giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

CARROLL B. MERRITT, *Business Manager.*

Sworn to and subscribed before me this 21st day of September, 1921.

JOSEPH H. POLI
Notary Public, Kings County.
[SEAL.] Kings County Clerk's No. 244
Certificate filed with New York Co. Clerk No. 375.
Commission expires March 30, 1923.



GEORGE ROGERS CLARK MONUMENT, UNIVERSITY OF VIRGINIA.

Robert Aitken, N. A., Sculptor. H. Van Buren Magonigle, Architect.

Awarded the Watrous Gold Medal for Sculpture, National Academy, 1921.